

SCHEMATIC DIAGRAM OF CONVENTIONAL EXCIMER LASER ANNEALER

FIG. 1 PRIOR ART

FIG.2A
PRIOR ART

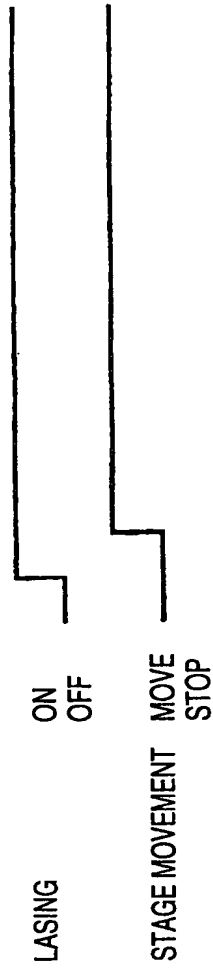


FIG.2B
PRIOR ART

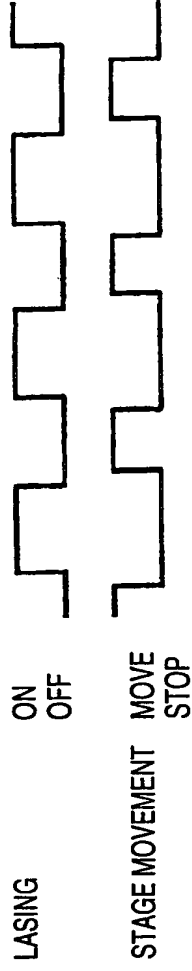


FIG.2C
PRIOR ART

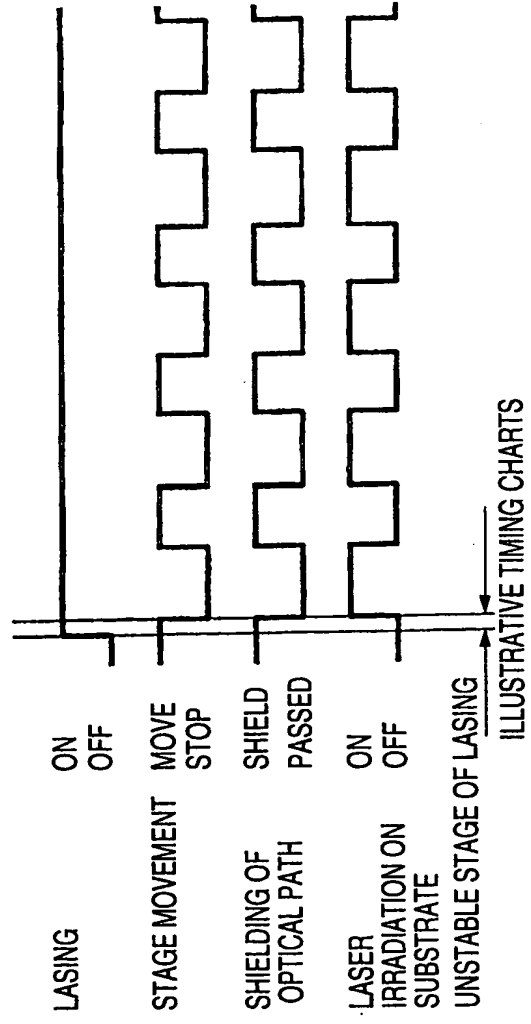


FIG.2D
PRIOR ART

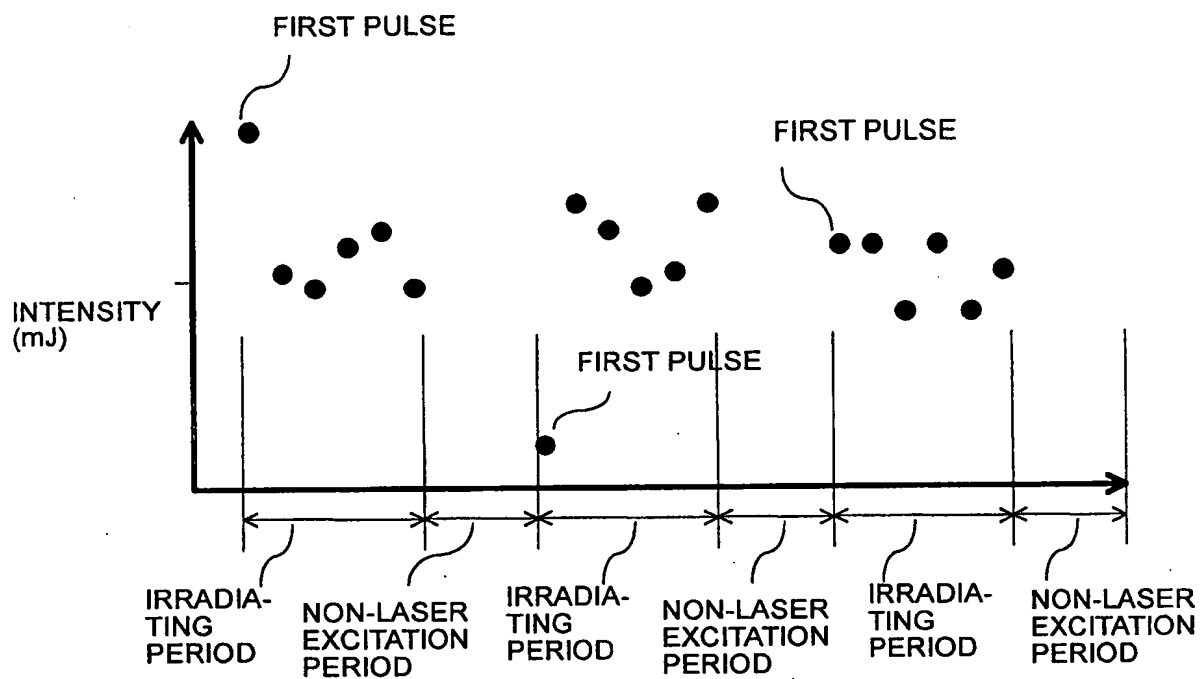


FIG. 3

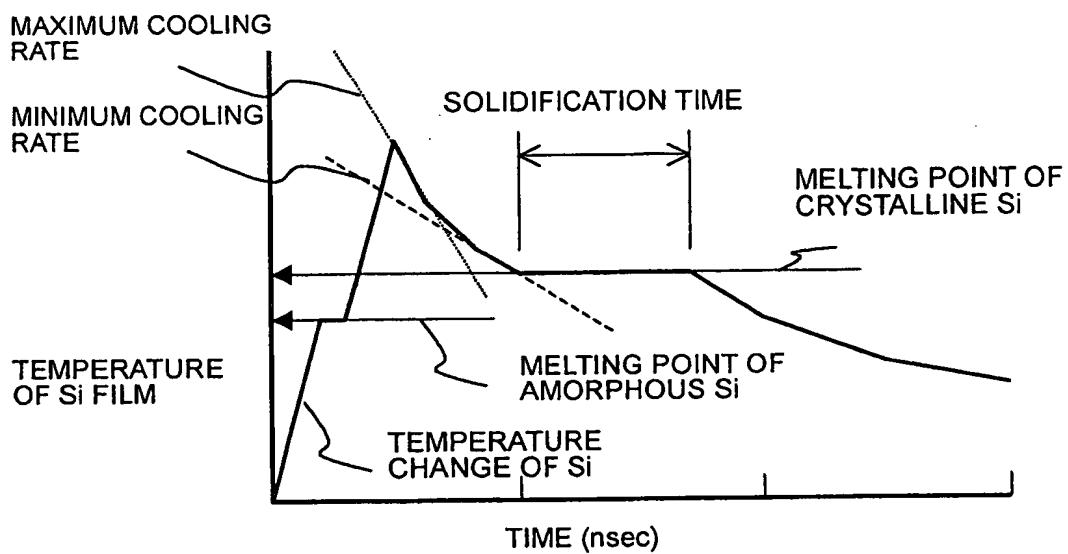
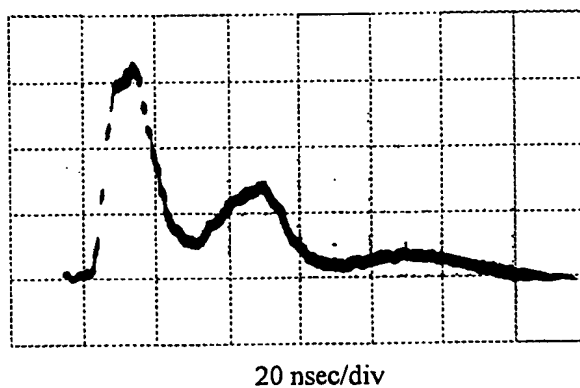
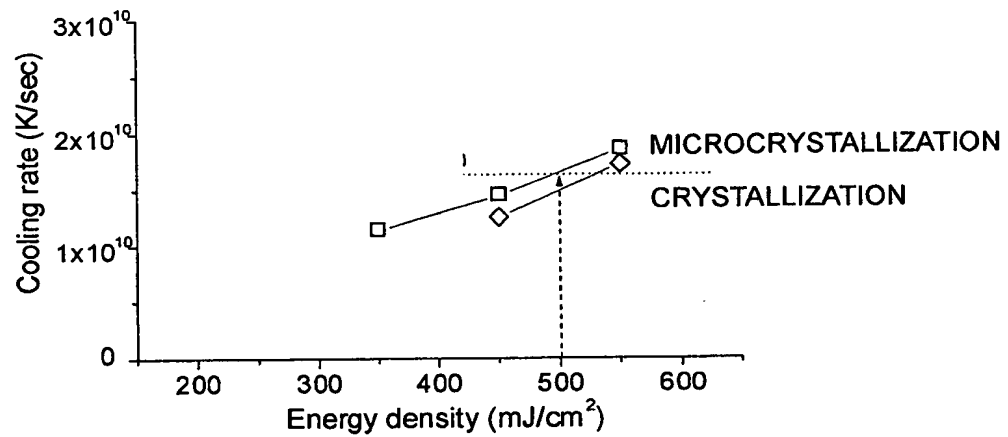


FIG. 4



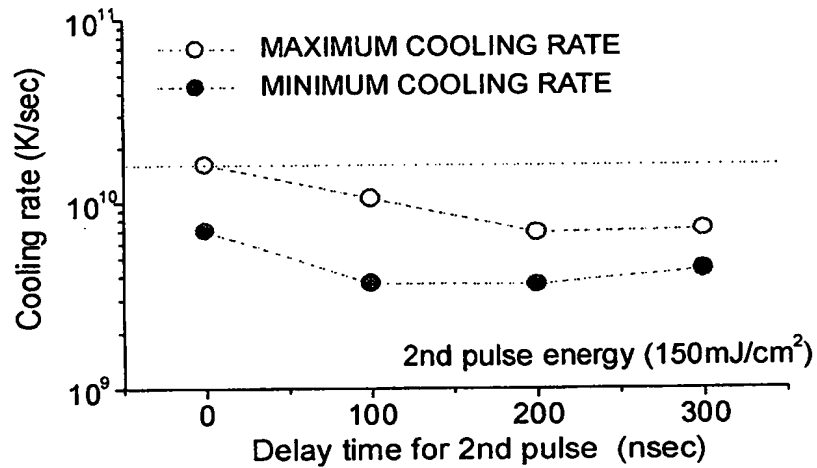
ILLUSTRATIVE LASER PULSE SHAPE

FIG. 5



RELATIONSHIP BETWEEN IRRADIATION INTENSITY AND COOLING RATE, AND COOLING RATE AT WHICH THE MATERIAL BECOMES AMORPHOUS

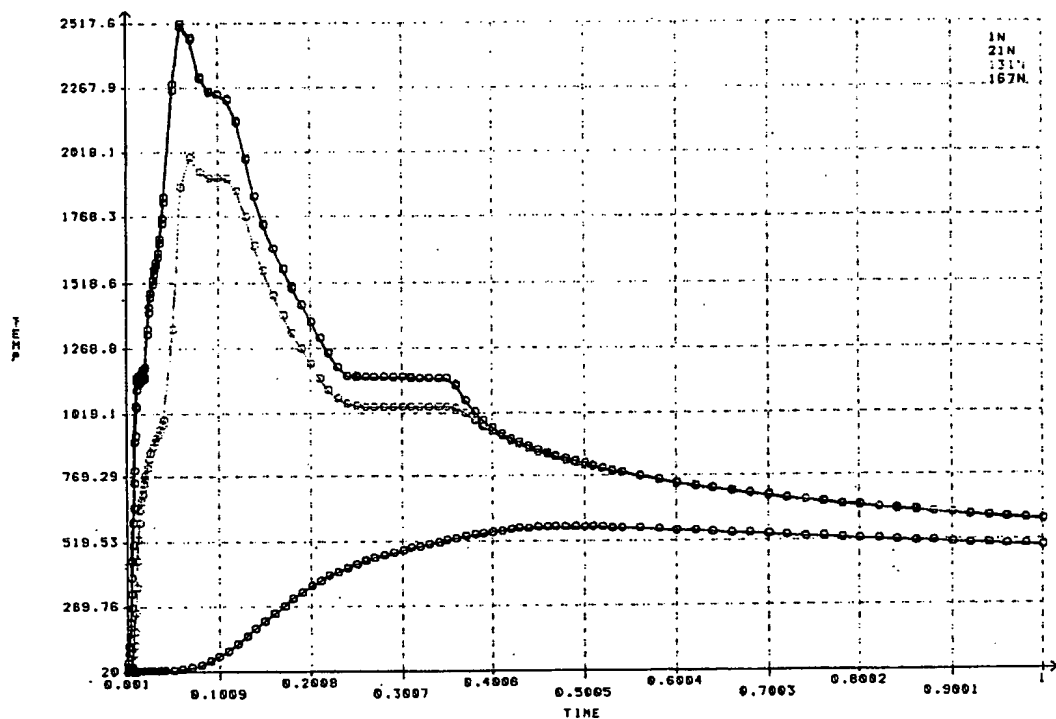
FIG. 6



RELATIONSHIP BETWEEN MAXIMUM COOLING RATE AFTER APPLICATION OF SECOND PULSE AND THE COOLING RATE IN THE VICINITY OF SOLIDIFICATION POINT

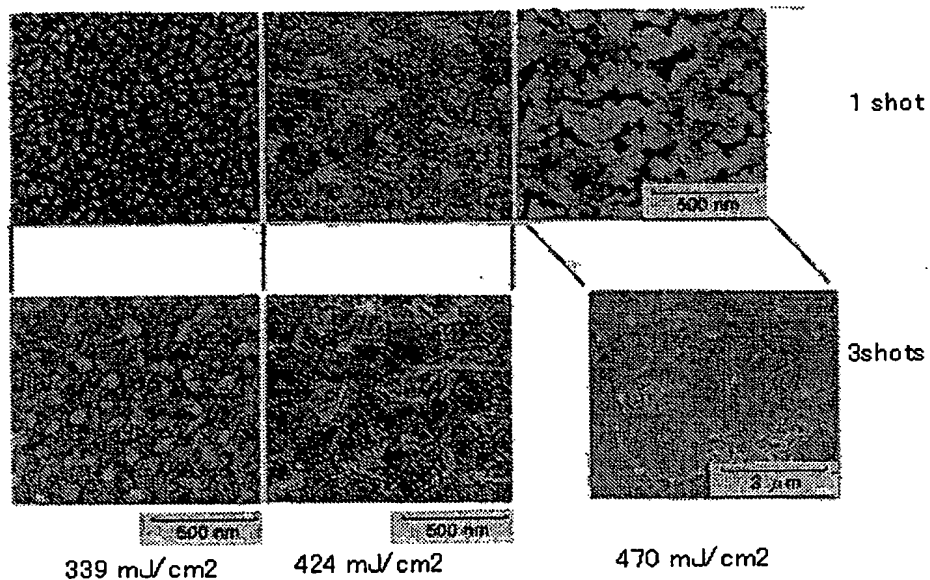
FIG. 9

BEST AVAILABLE COPY



TEMPERATURE OF SILICON THIN FILM 75nm THICK ON A SiO_2 SUBSTRATE IRRADIATED AT AN INTENSITY OF $450\text{mJ}/\text{cm}^2$ BY XeCL LASER (WAVELENGTH: 308nm)

FIG. 7



ELECTRON MICROSCOPIC PHOTOGRAPHS OF LASER-INDUCED CRYSTALLIZED FILMS AFTER ZERO-ETCHING RELATIVE TO IRRADIATION INTENSITY AND NUMBER OF IRRADIATION TIME

FIG. 8

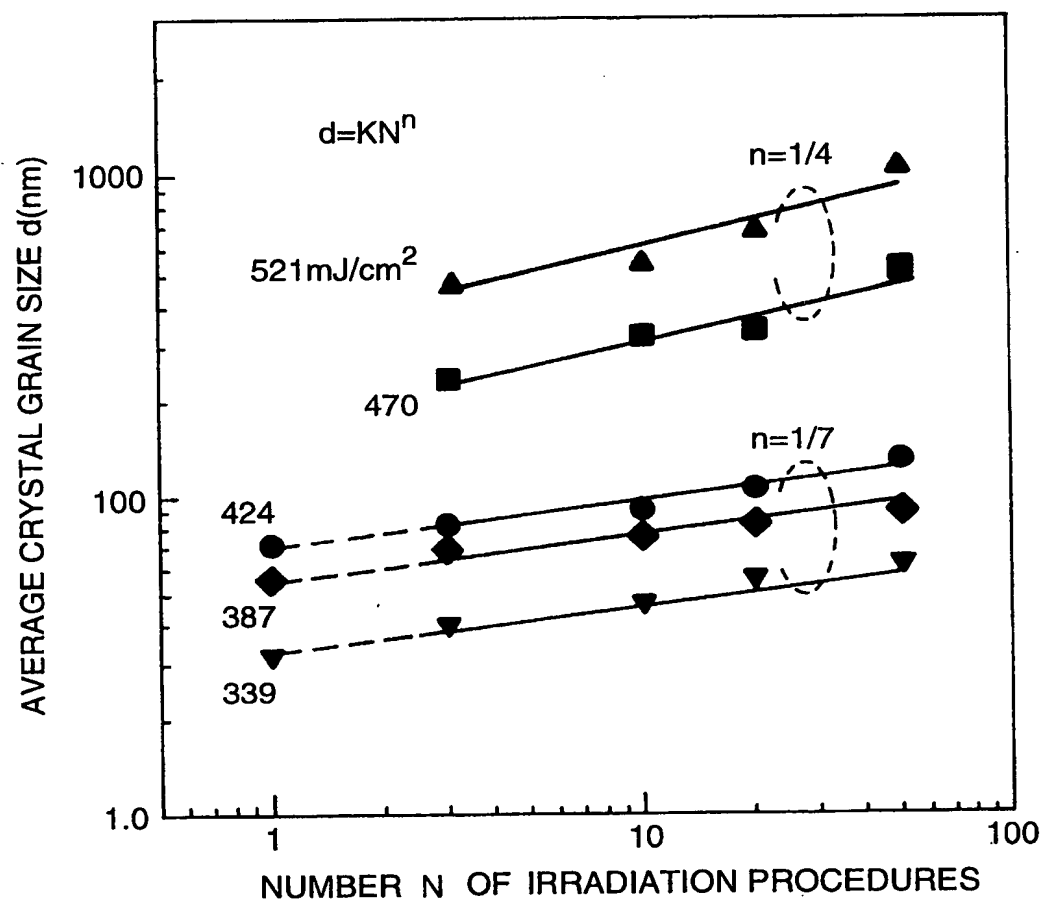


FIG.10

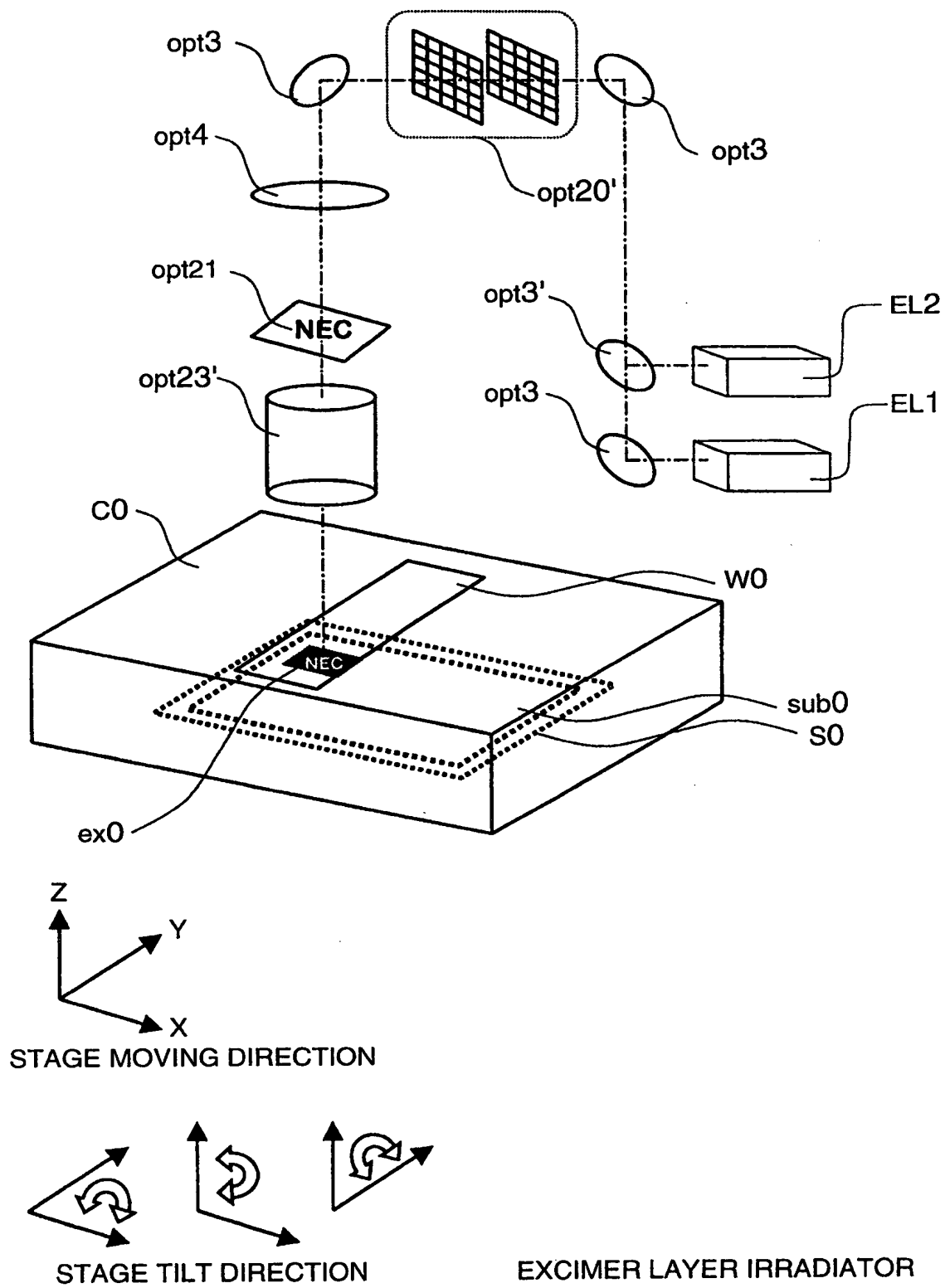
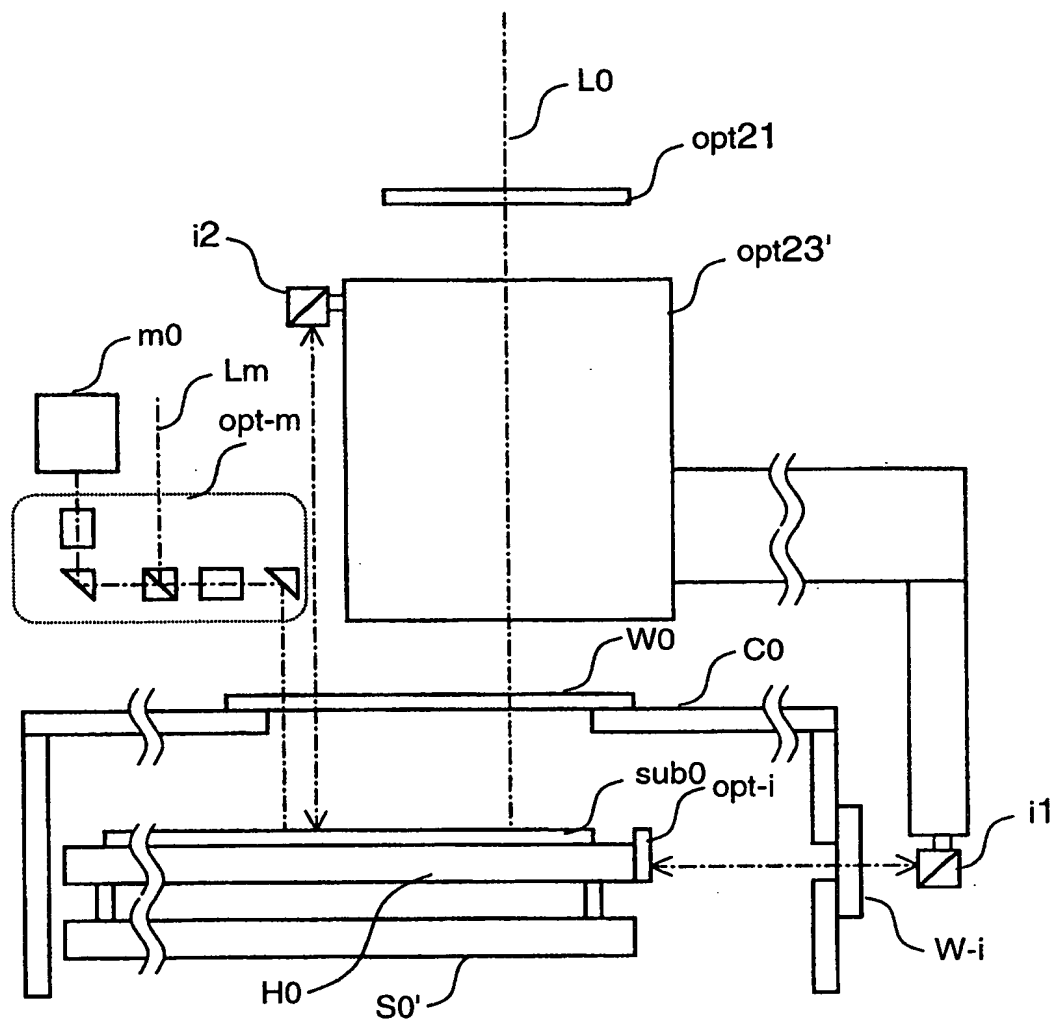


FIG.11



ALIGNMENT MECHANISM

FIG.12

BEST AVAILABLE COPY

FIG.13A
MASK
PATTERN

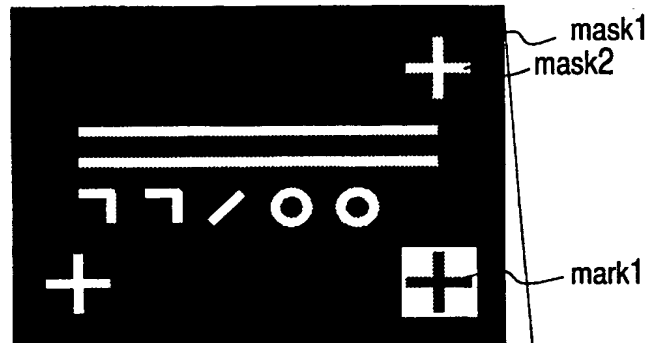


FIG.13B
EXPOSURE
PATTERN

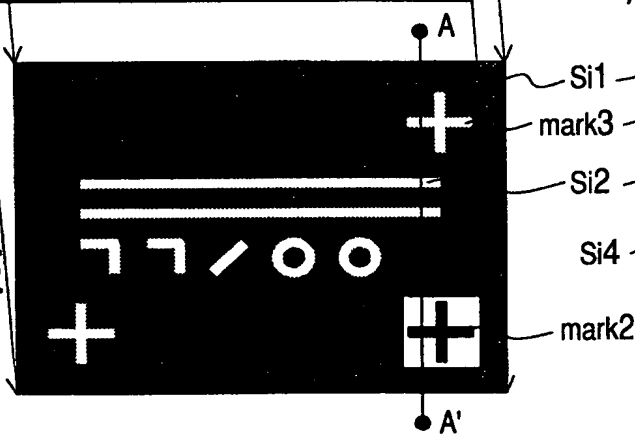
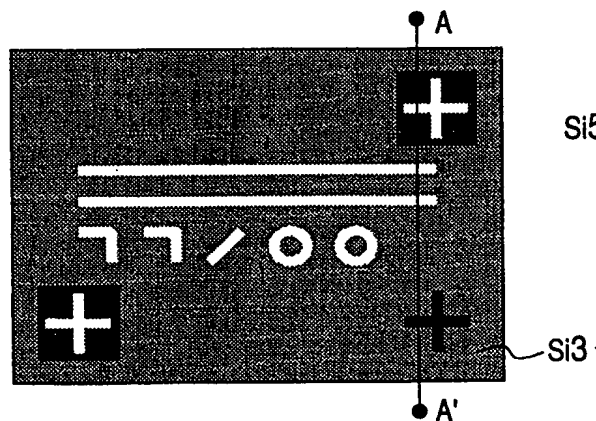


FIG.13D
ETCHING
PATTERN



A-A' CROSS SECTION

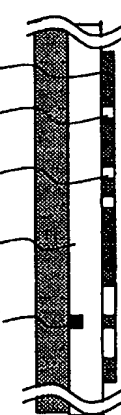


FIG.13C

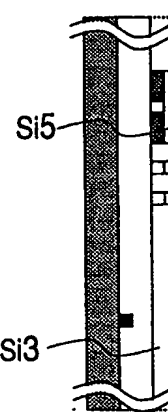


FIG.13E

PATTERN TRANSFER AND ALIGNMENT IN
EXCIMER LASER ANNEALING

ILLUSTRATIVE CONTROL PROCEDURE (1)

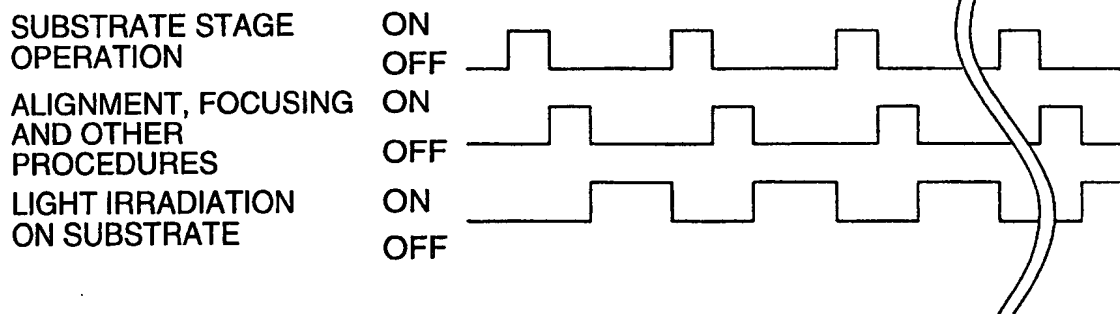


FIG.14A

ILLUSTRATIVE CONTROL PROCEDURE (2)

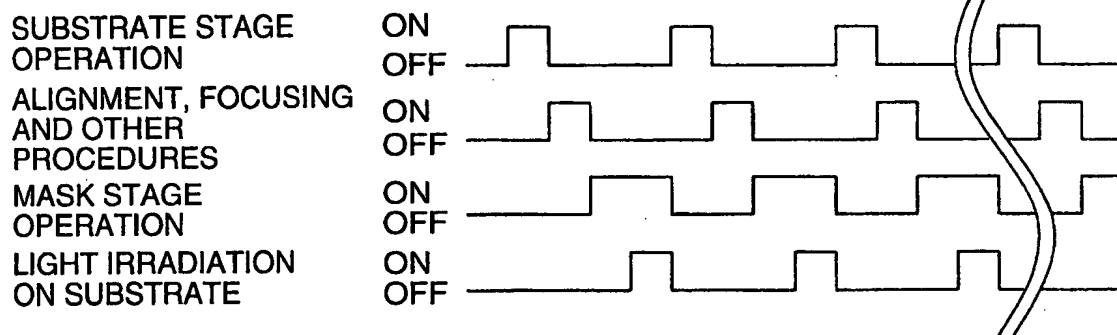
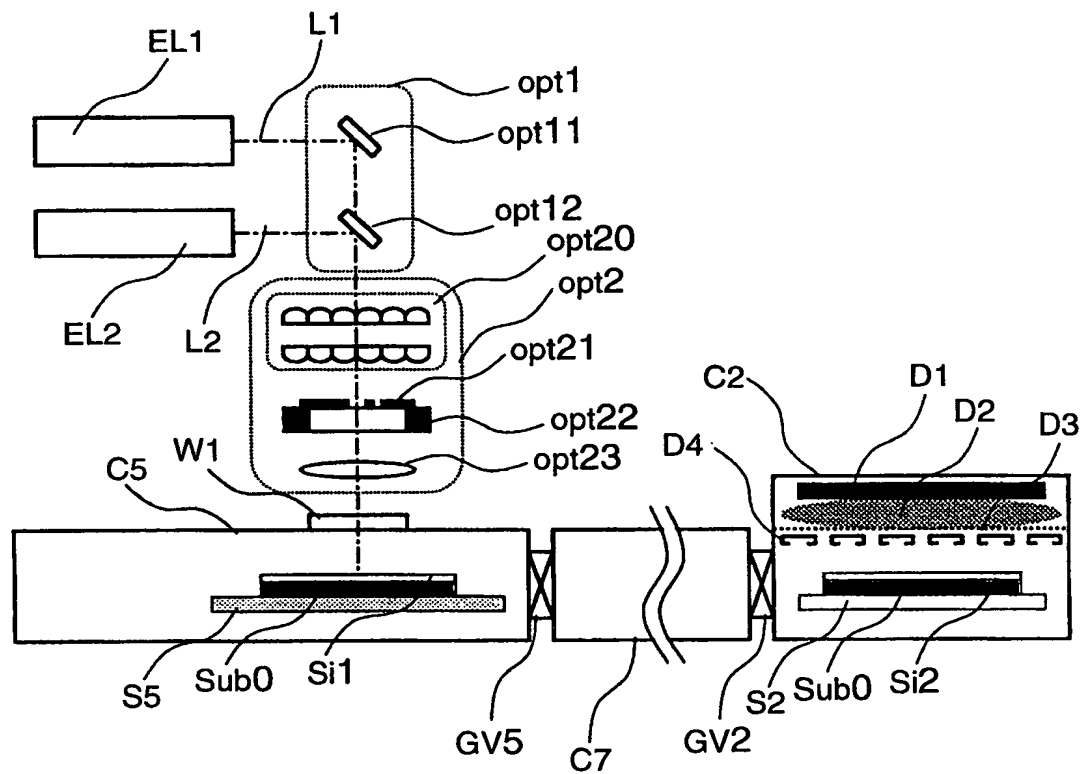


FIG.14B



PLASMA-ENHANCED CVD CHAMBER-SUBSTRATE TRANSFER
CHAMBER-LASER IRRADIATING CHAMBER

FIG.15

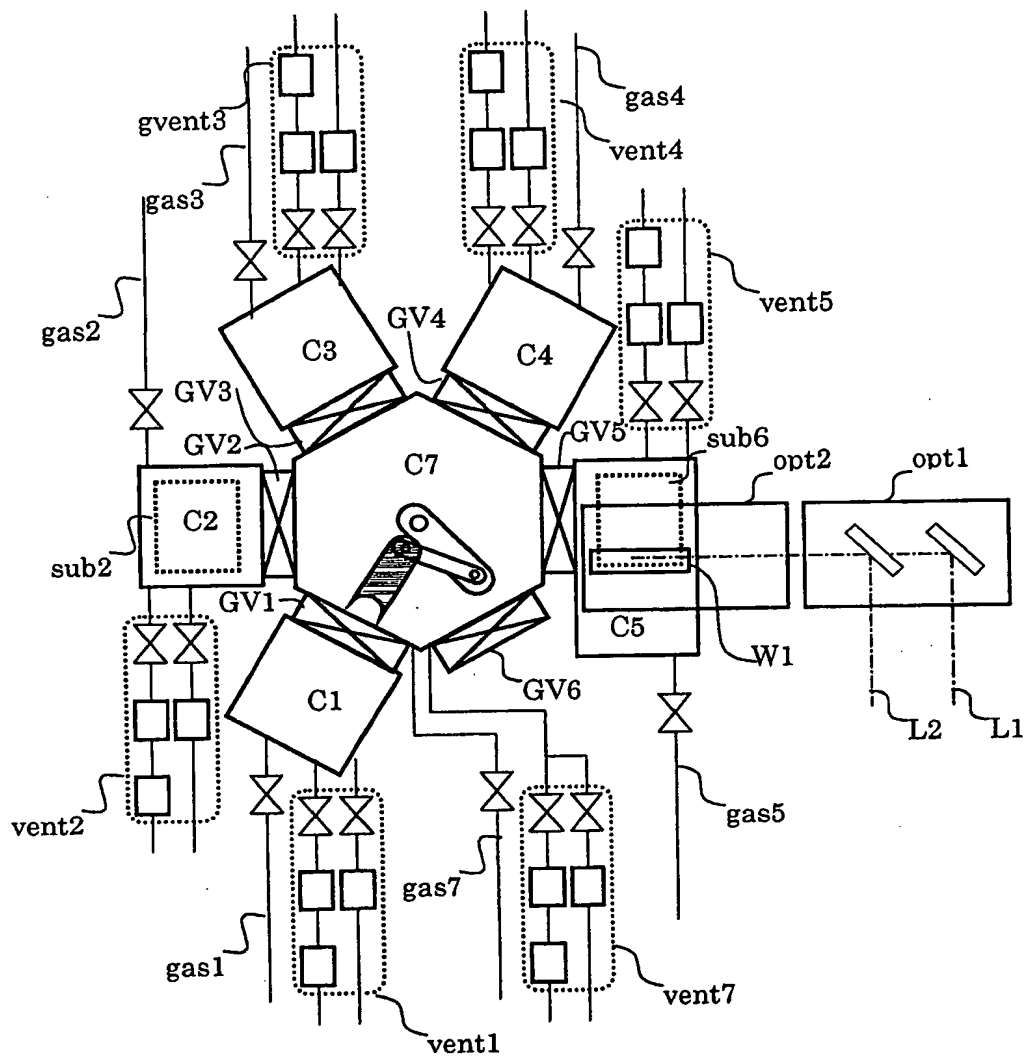


FIG. 16

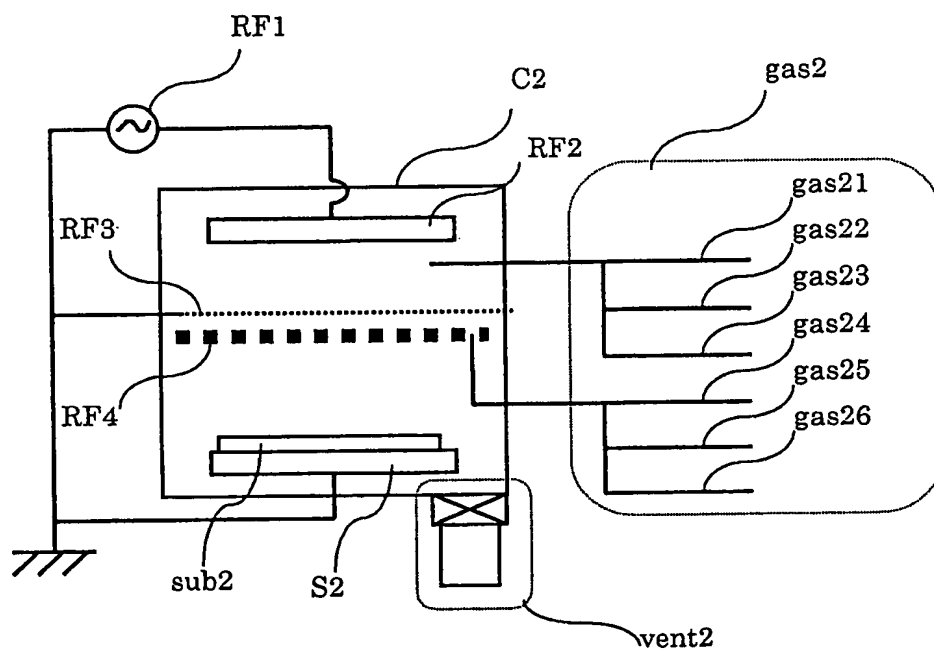
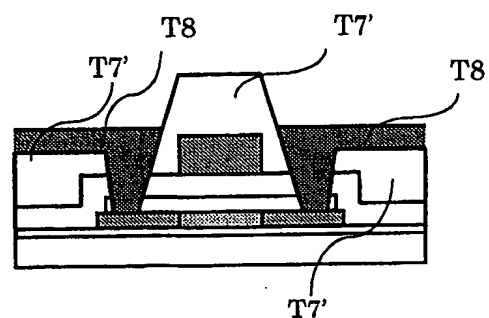
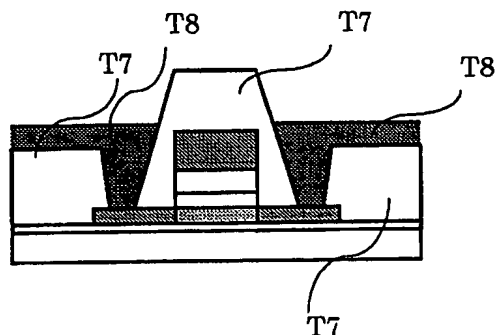
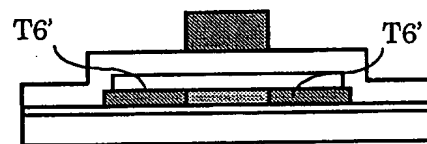
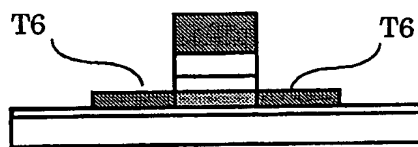
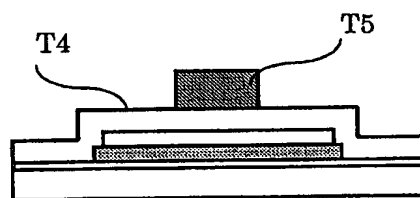
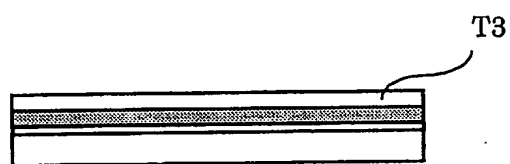
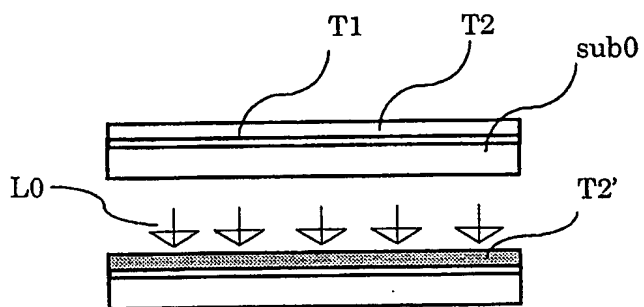


FIG. 17



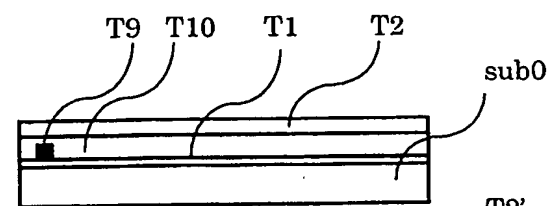


FIG. 19A

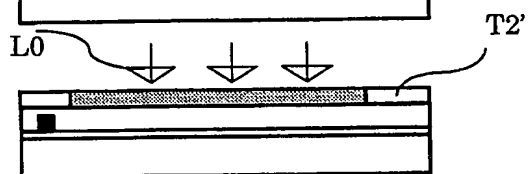


FIG. 19B

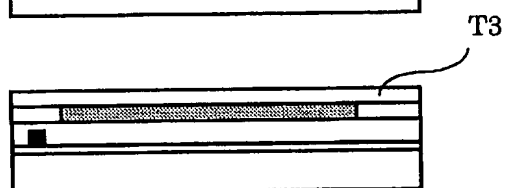


FIG. 19C

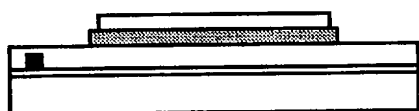


FIG. 19D

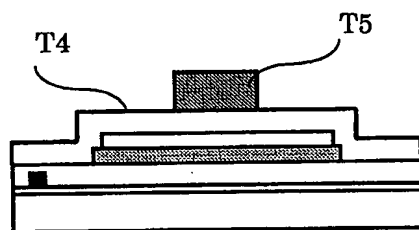


FIG. 19E

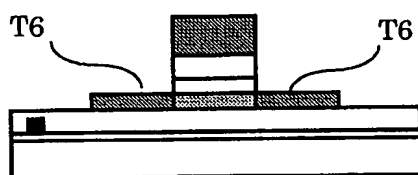


FIG. 19F1

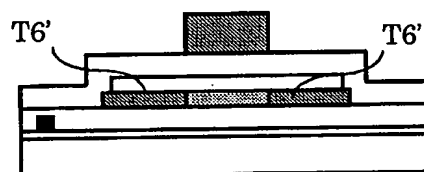


FIG. 19F2

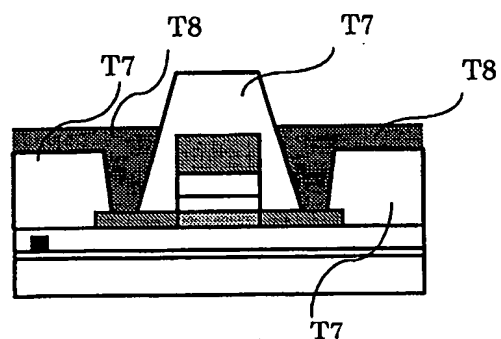


FIG. 19G1

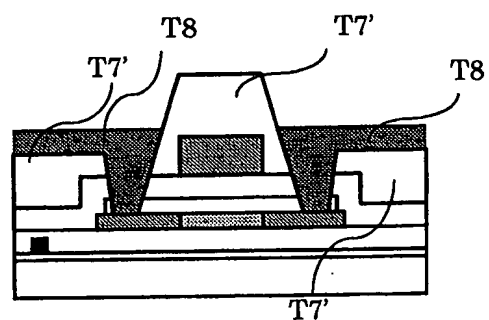


FIG. 19G2

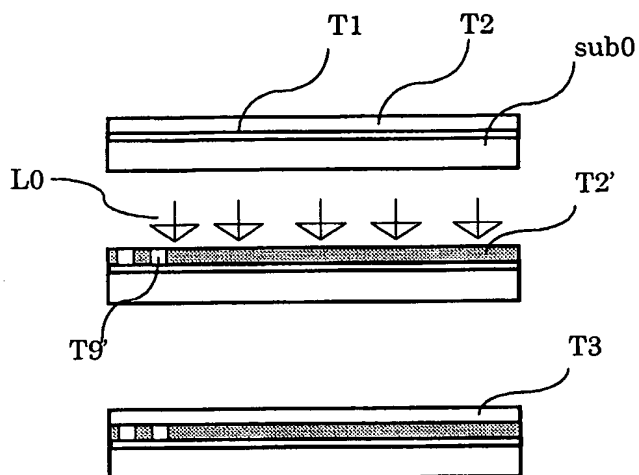


FIG. 20A

FIG. 20B

FIG. 20C



FIG. 20D

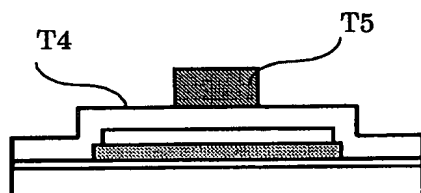


FIG. 20E

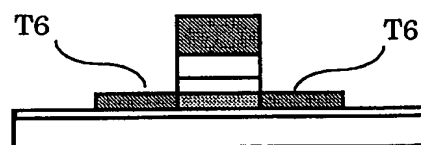


FIG. 20G1

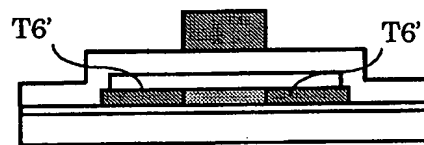


FIG. 20G2

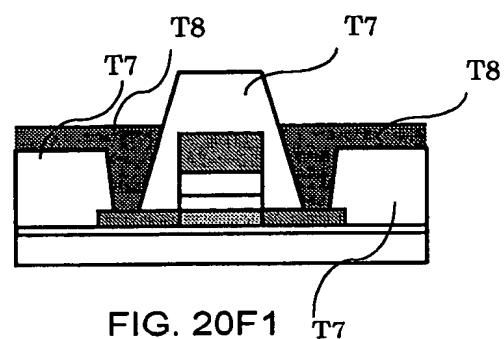


FIG. 20F1

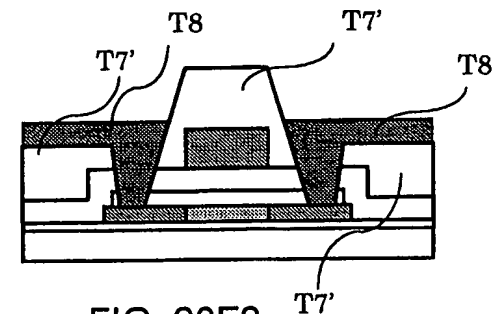


FIG. 20F2

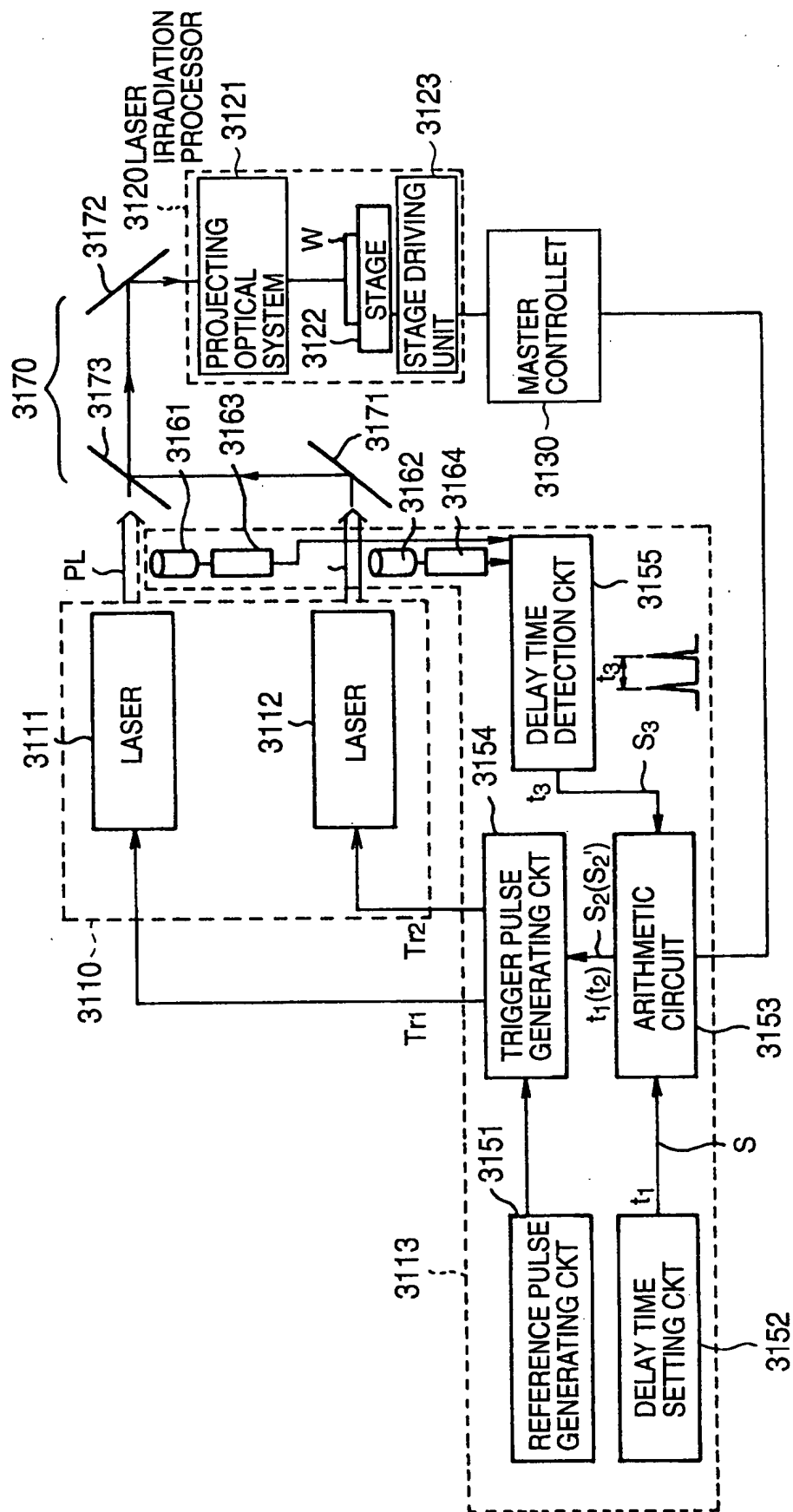


FIG.21

FIG.22A

FIRST LASING TRIGGER

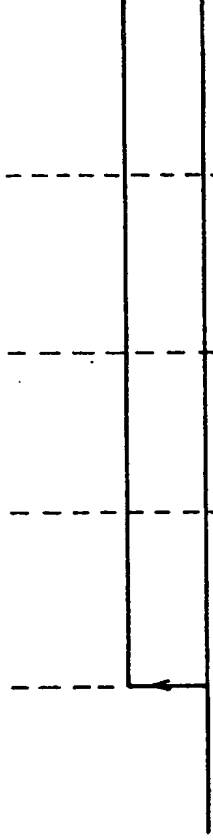
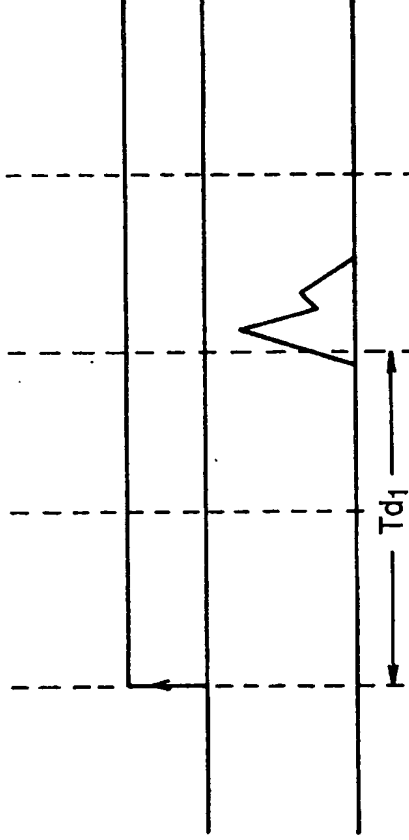


FIG.22B

FIRST LASING PULSE



TRIGGER DELAY CIRCUIT
OUTPUT / SECOND
LASING TRIGGER

FIG.22C

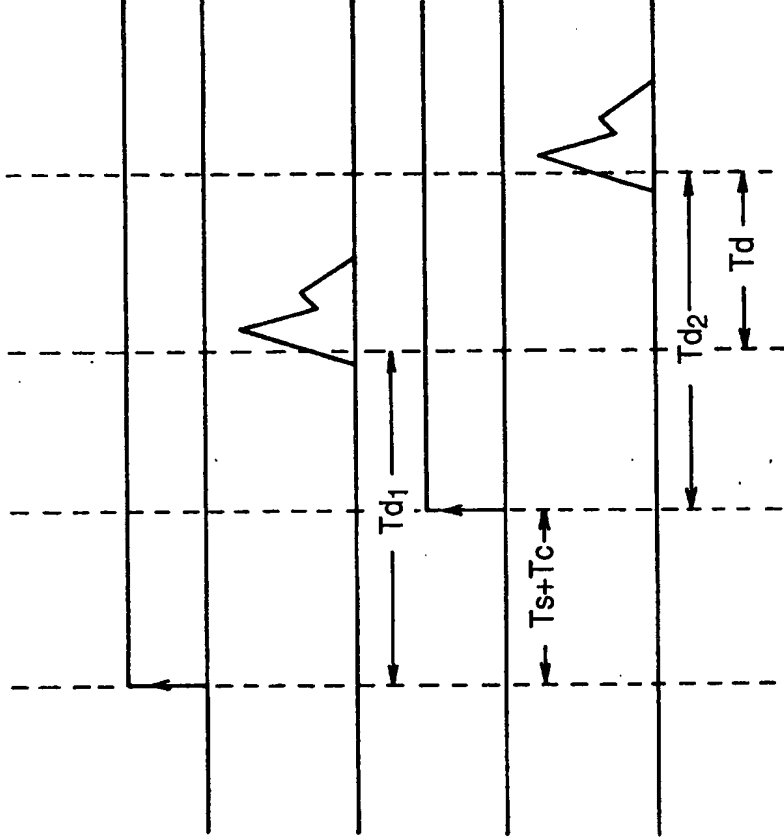
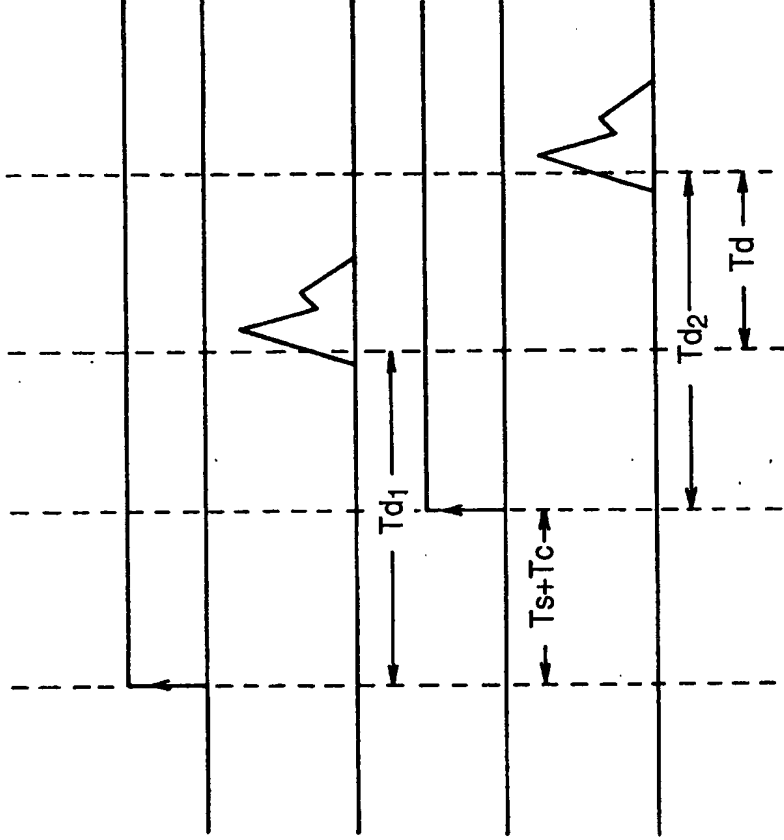


FIG.22D

SECOND LASING PULSE



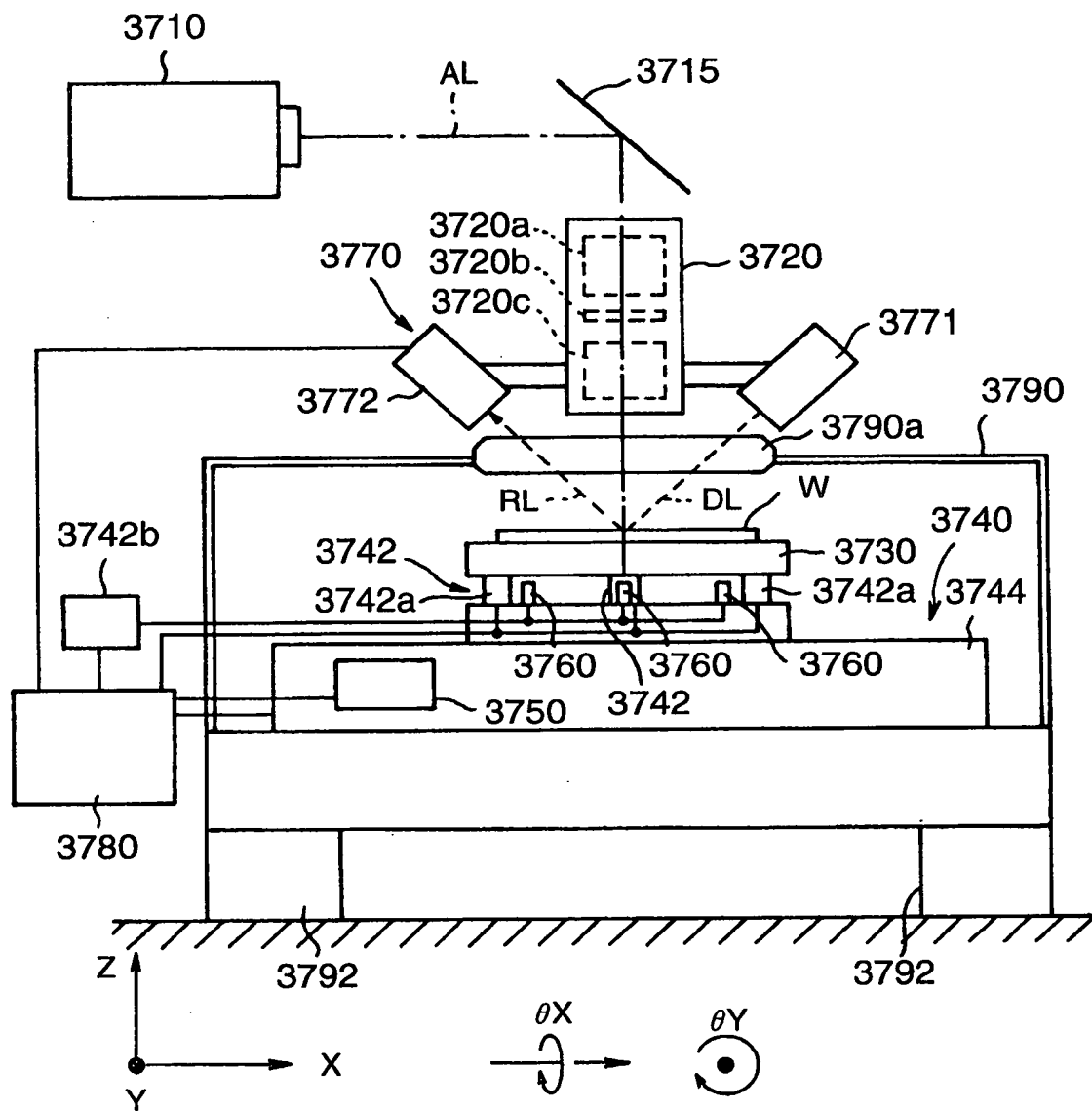


FIG.23

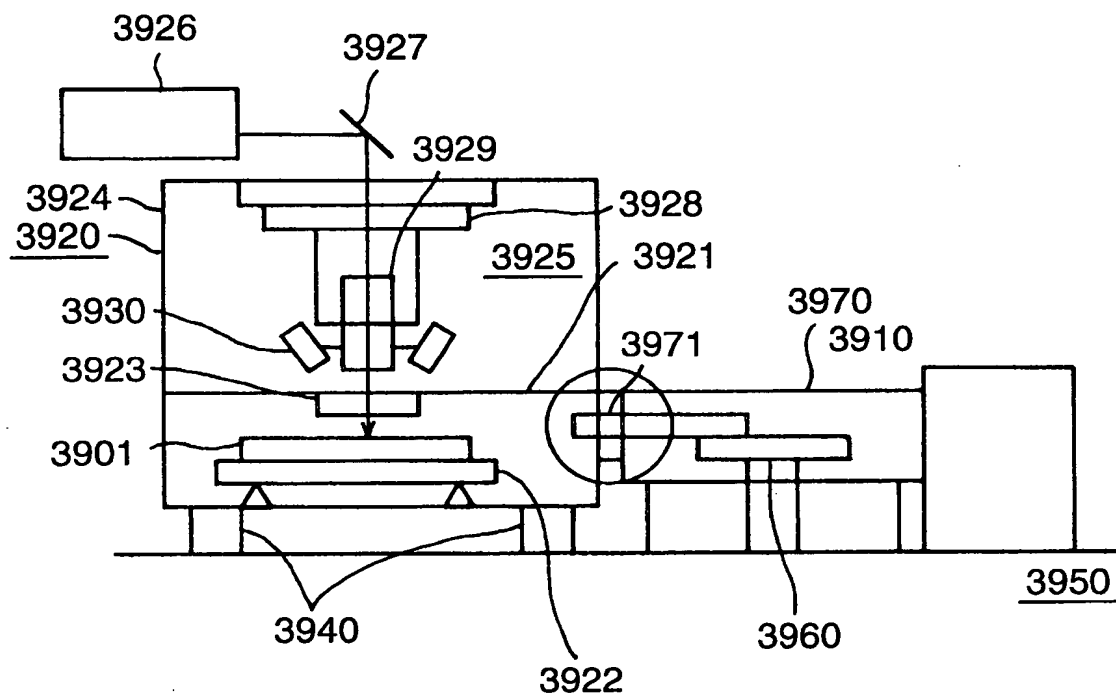


FIG. 24

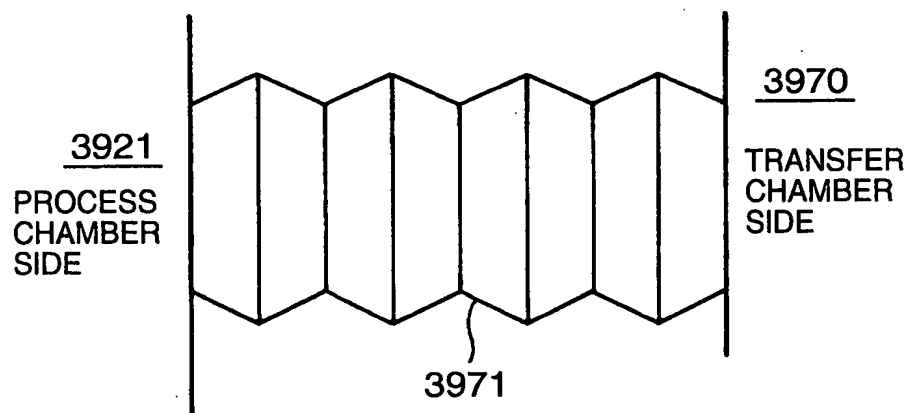


FIG. 25

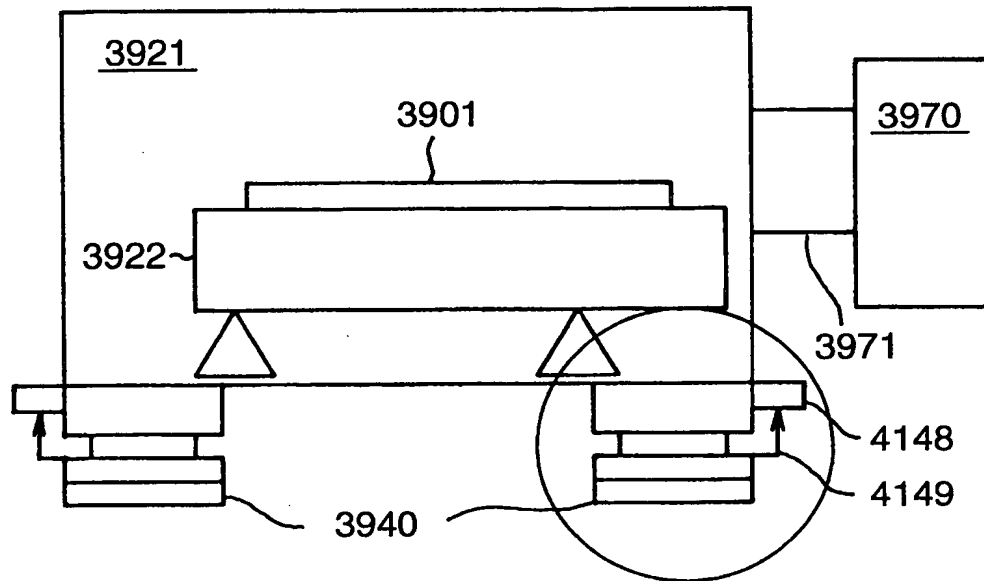


FIG.26

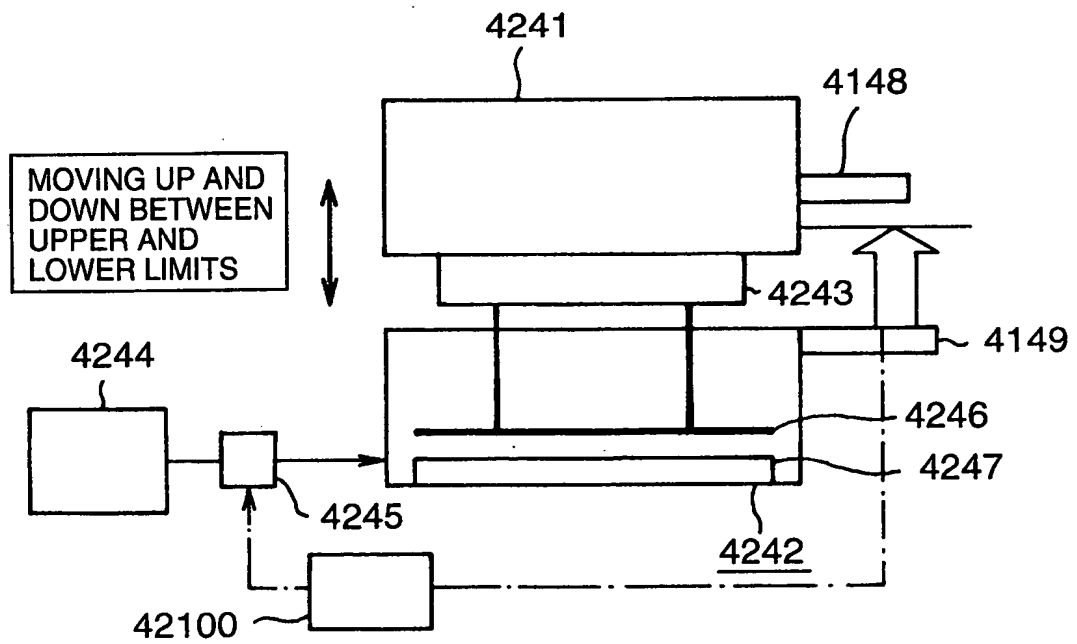


FIG.27

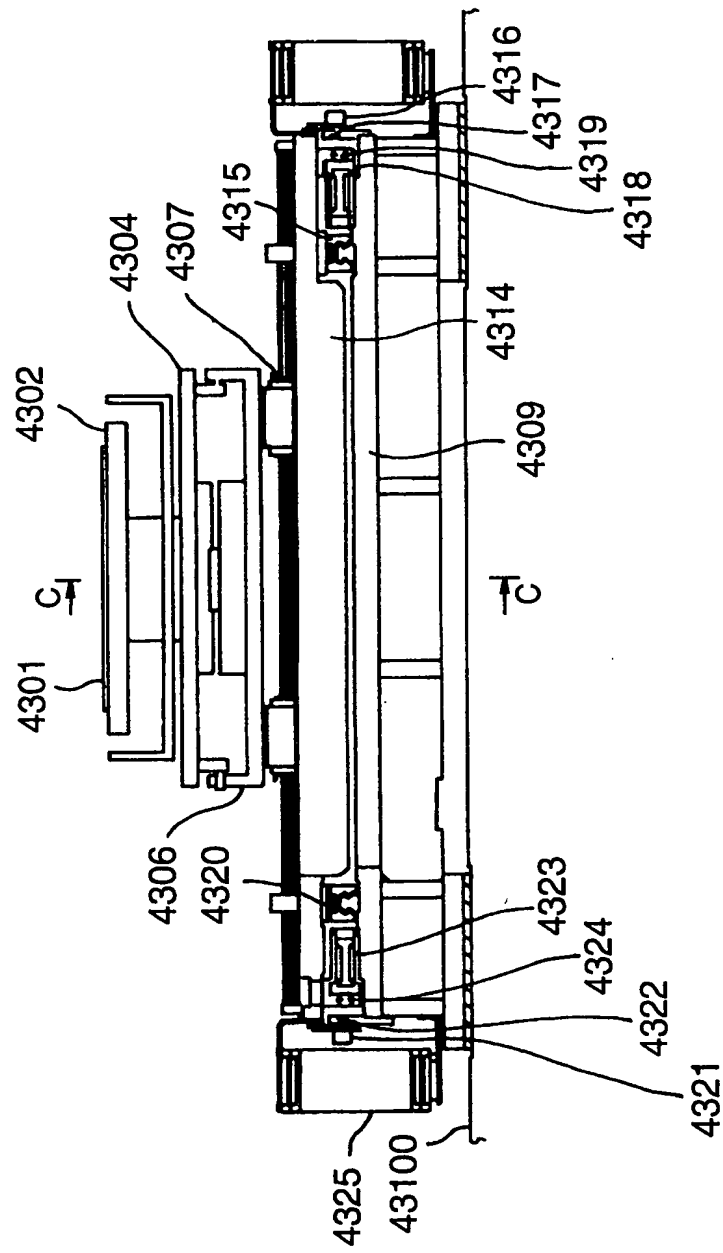
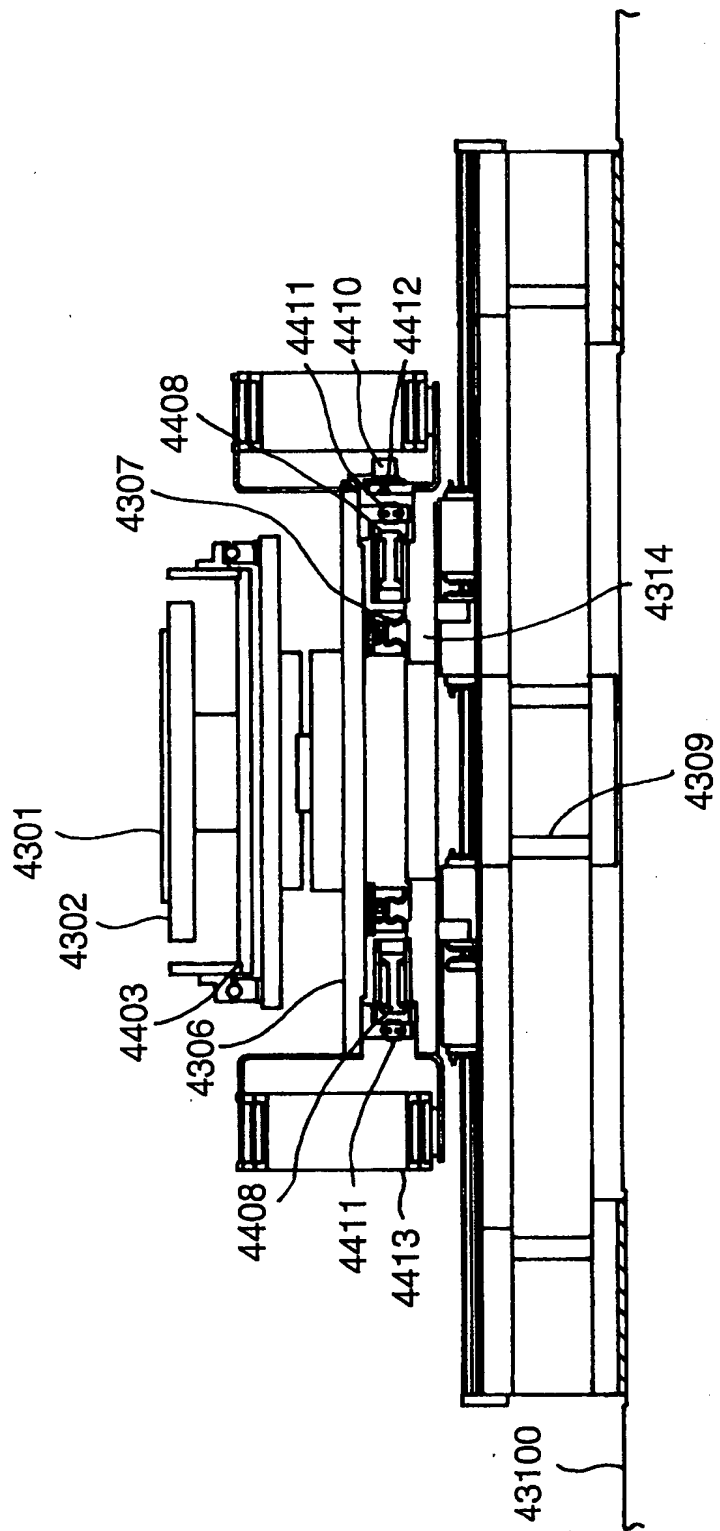


FIG.28



C-C

FIG.29

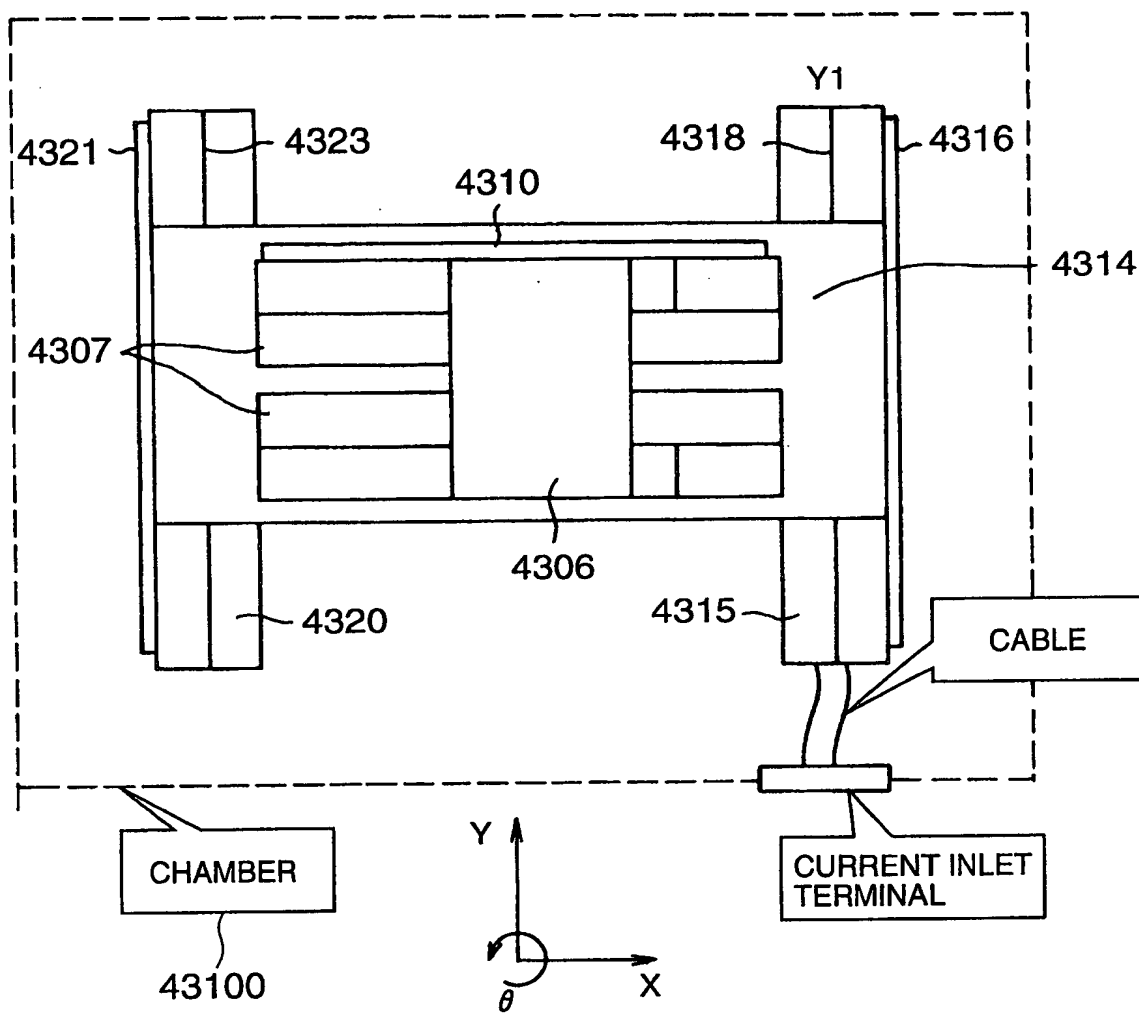


FIG.30

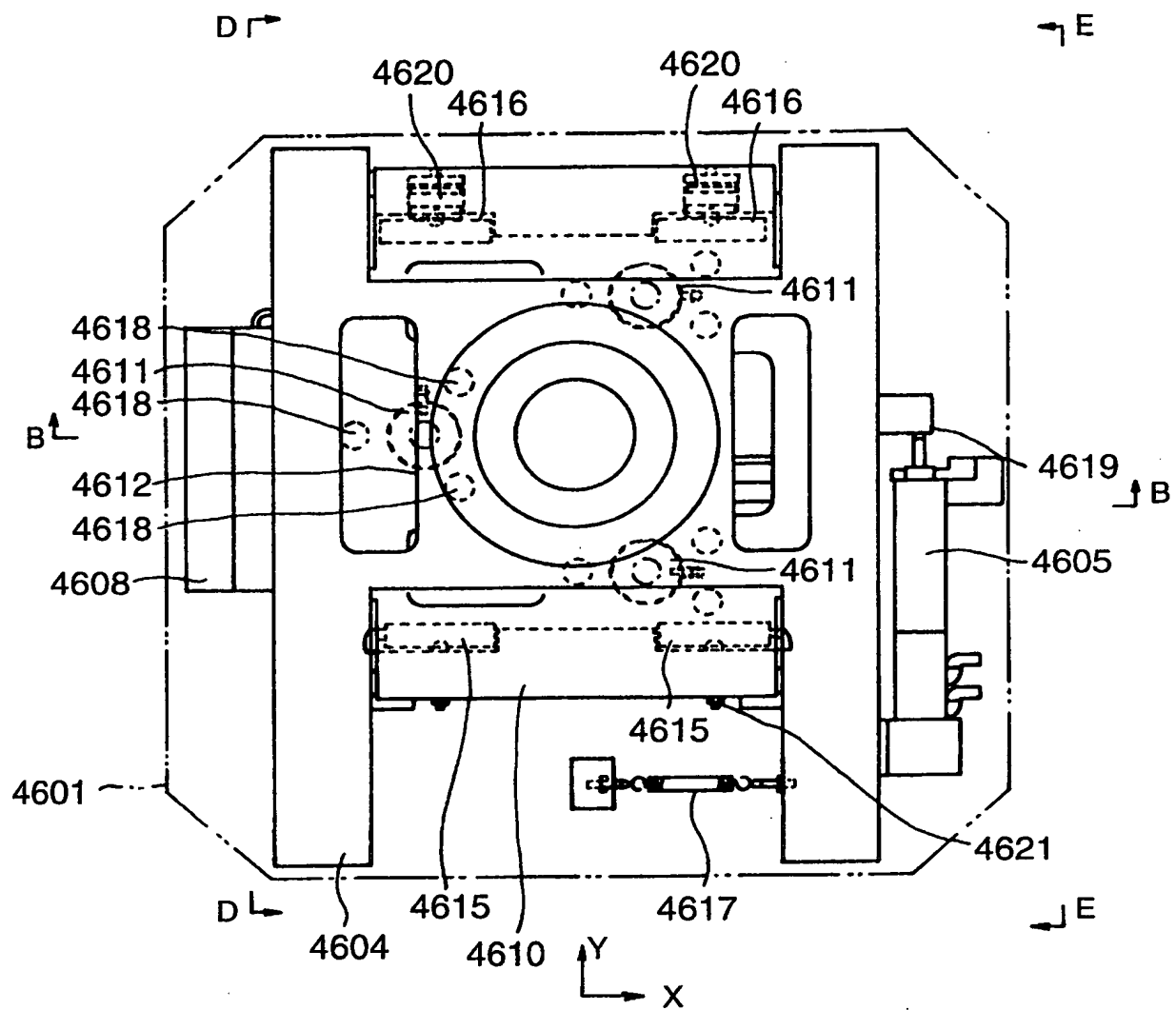


FIG.31

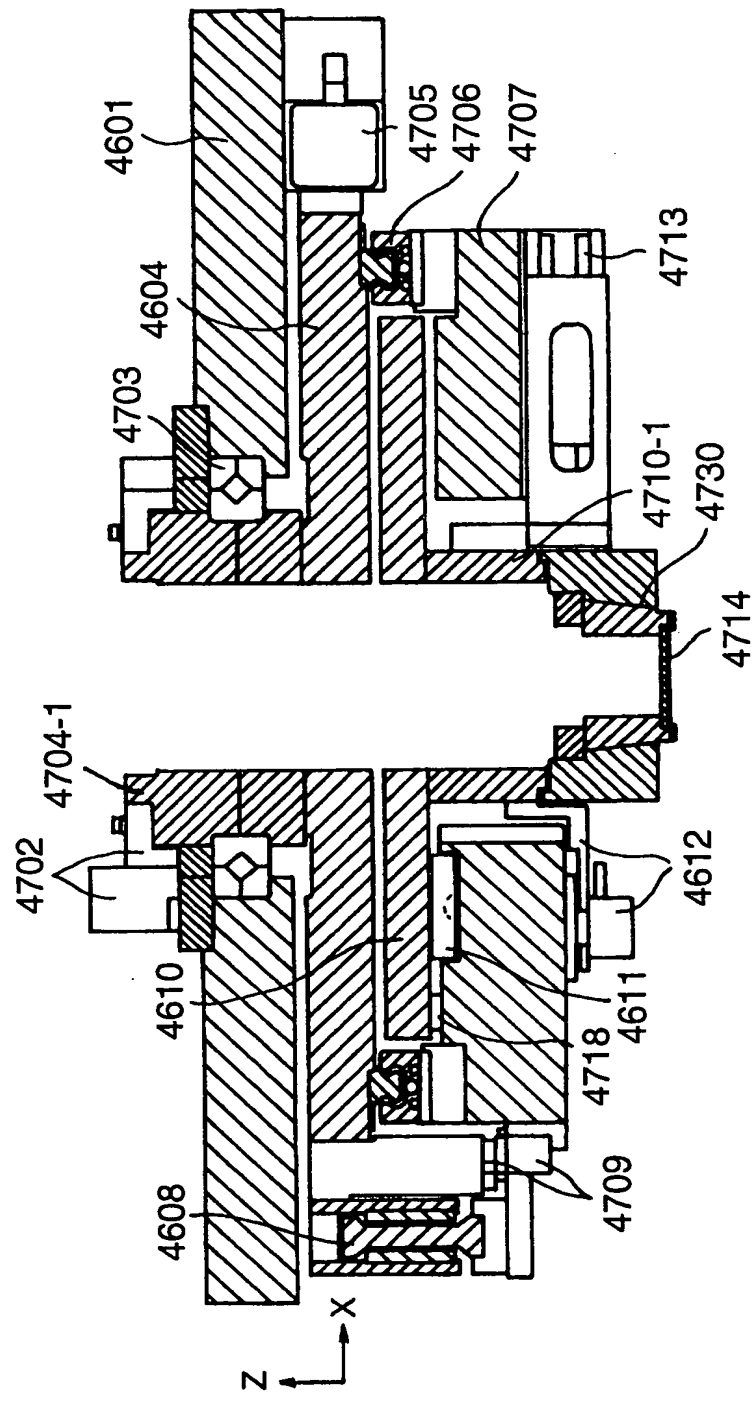


FIG.32

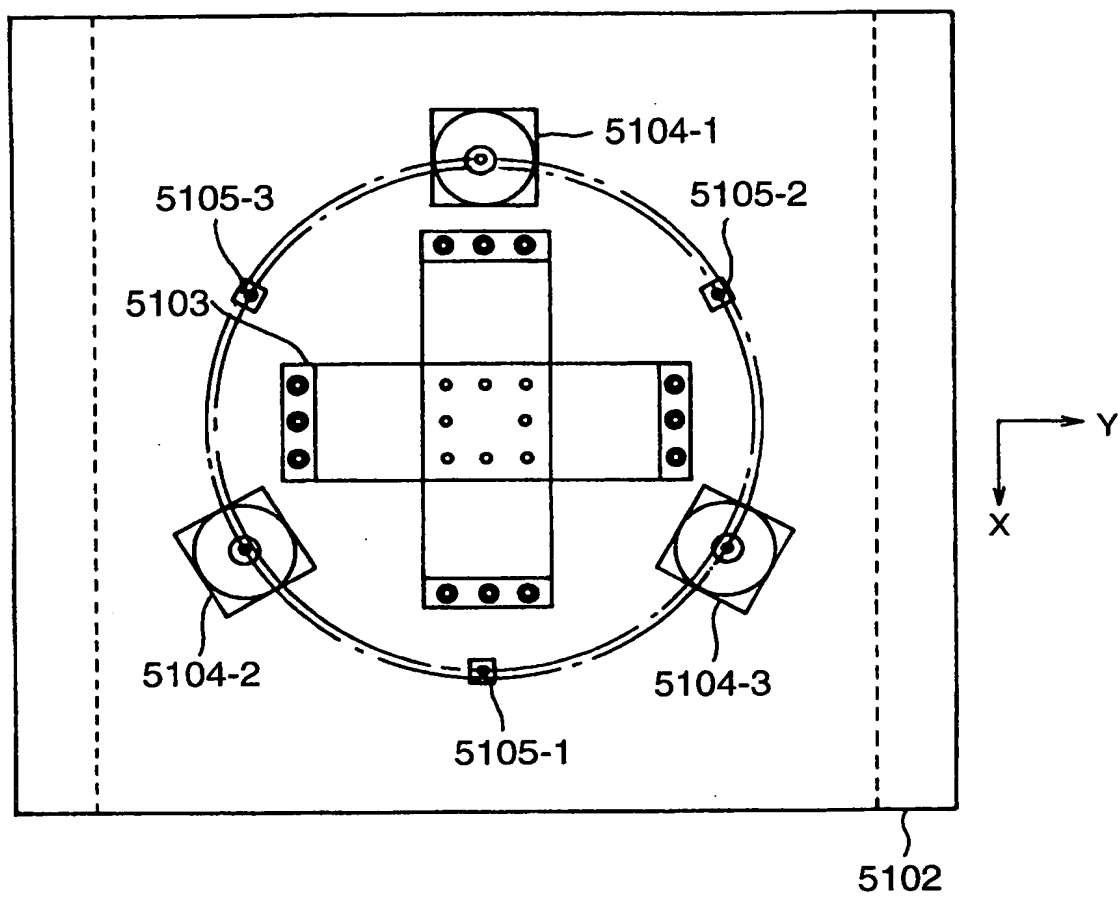


FIG.33

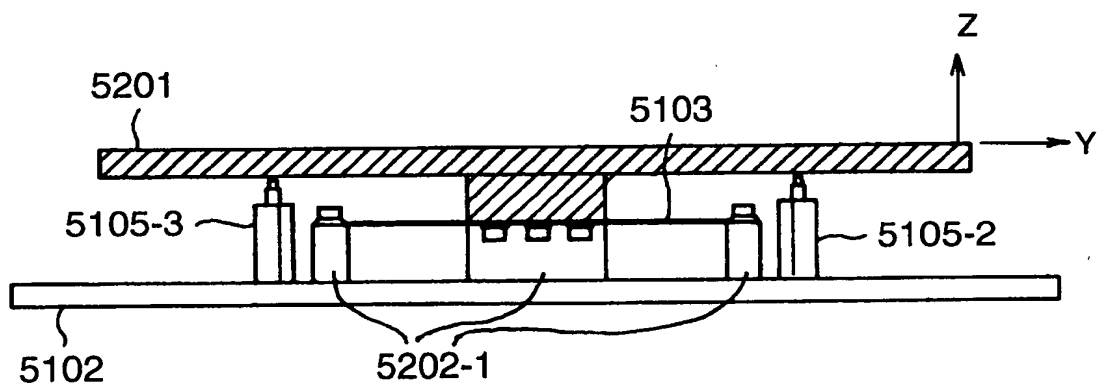


FIG.34

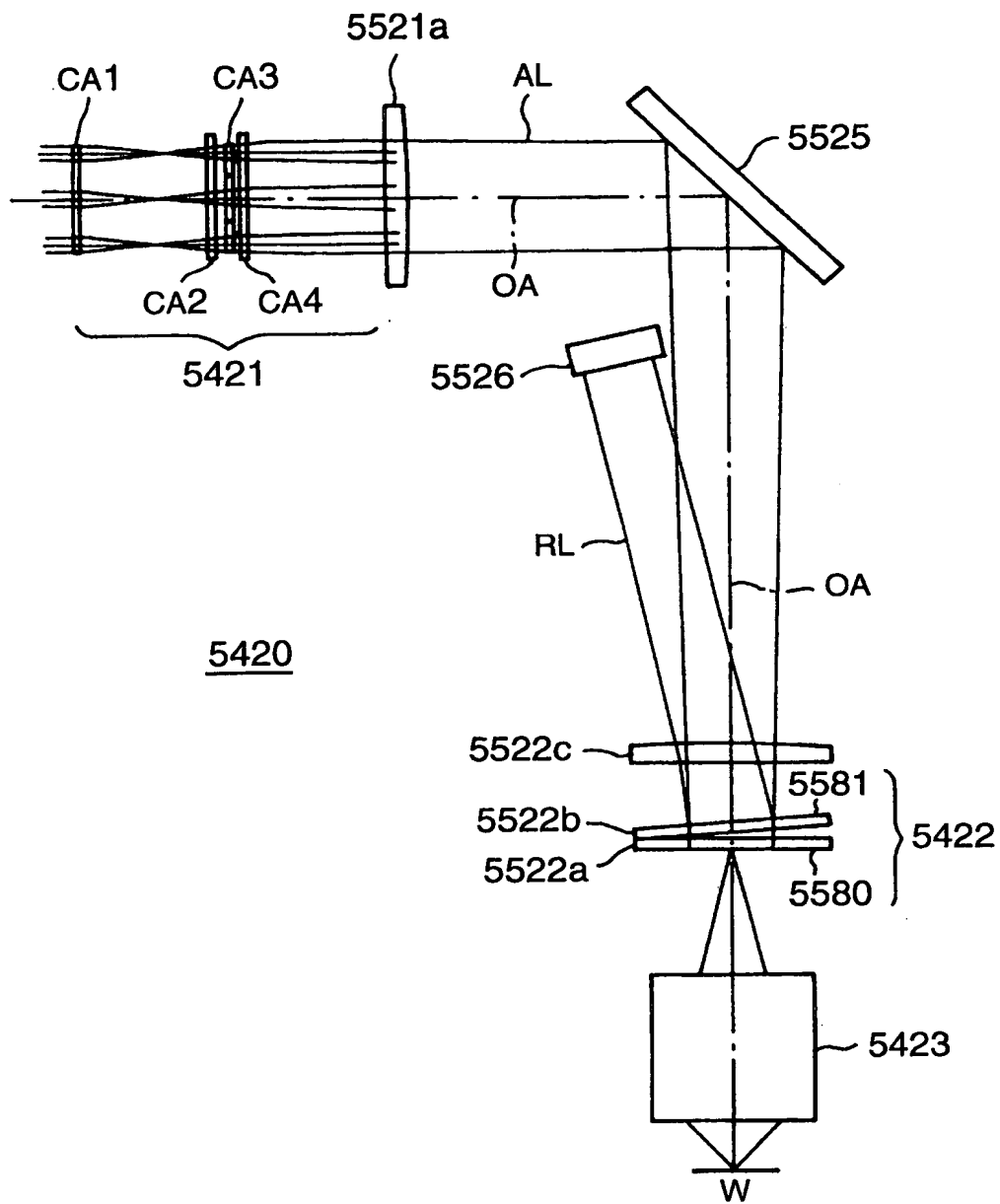


FIG.35

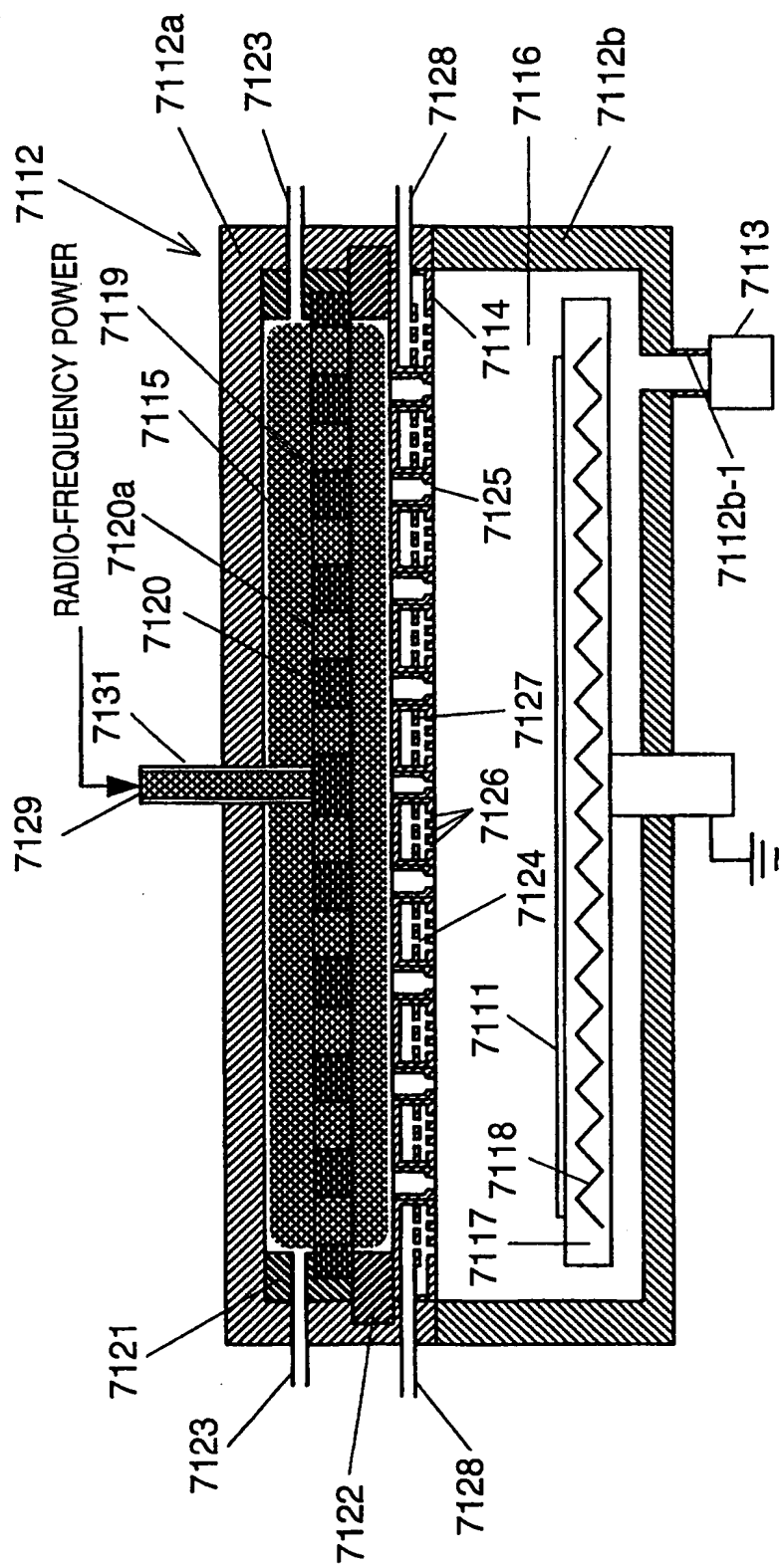


FIG. 36

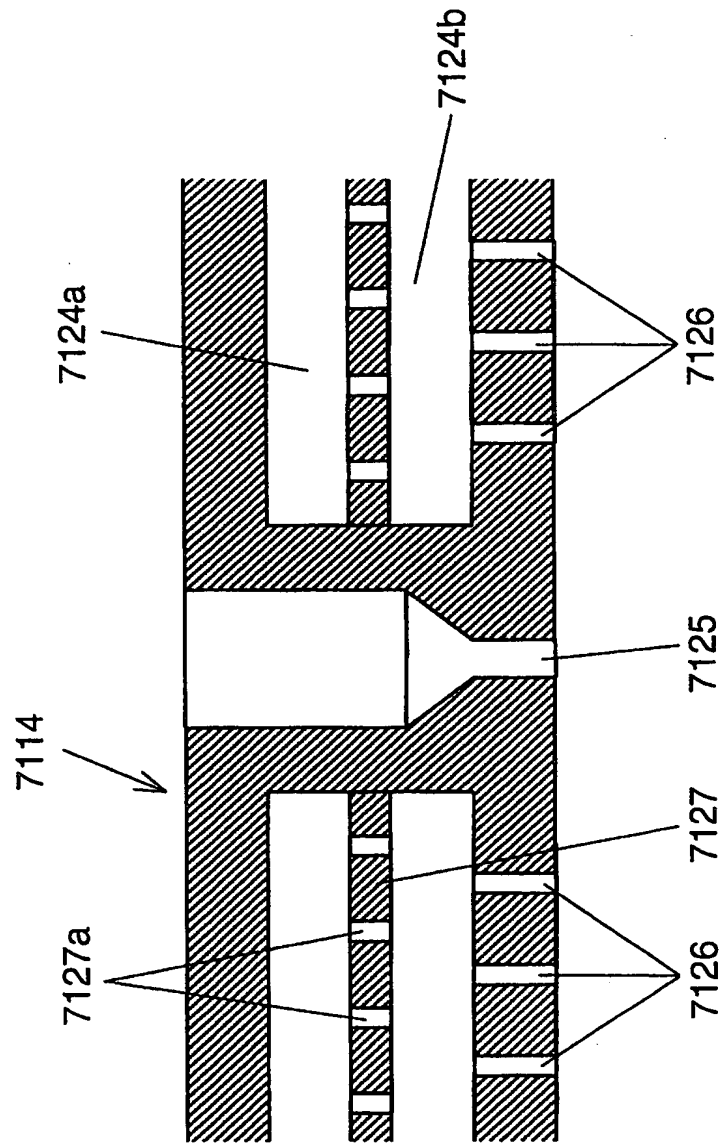


FIG.37





FIG. 39

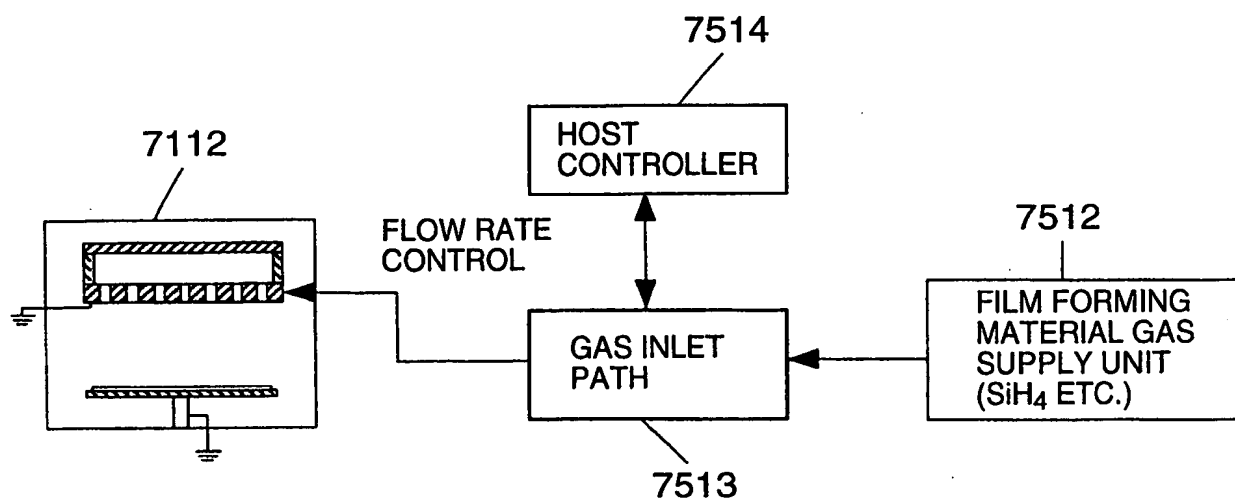


FIG.40

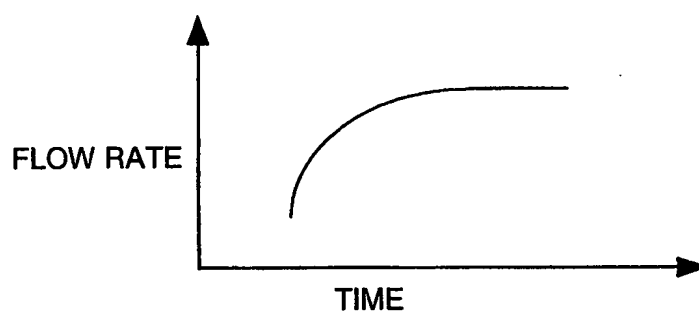


FIG.41

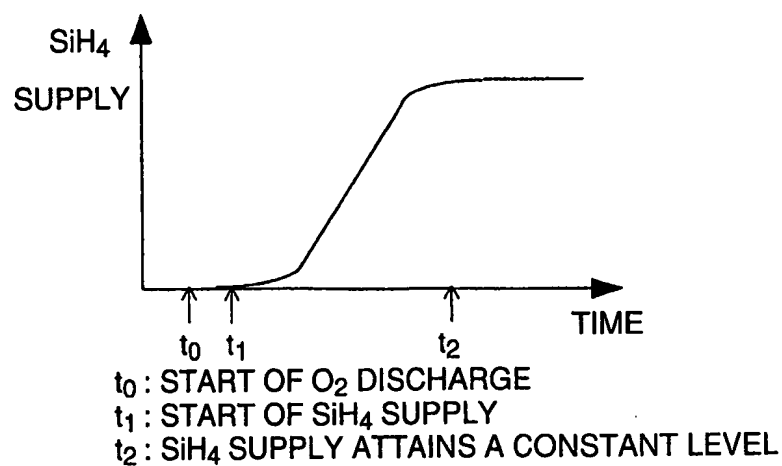


FIG.42



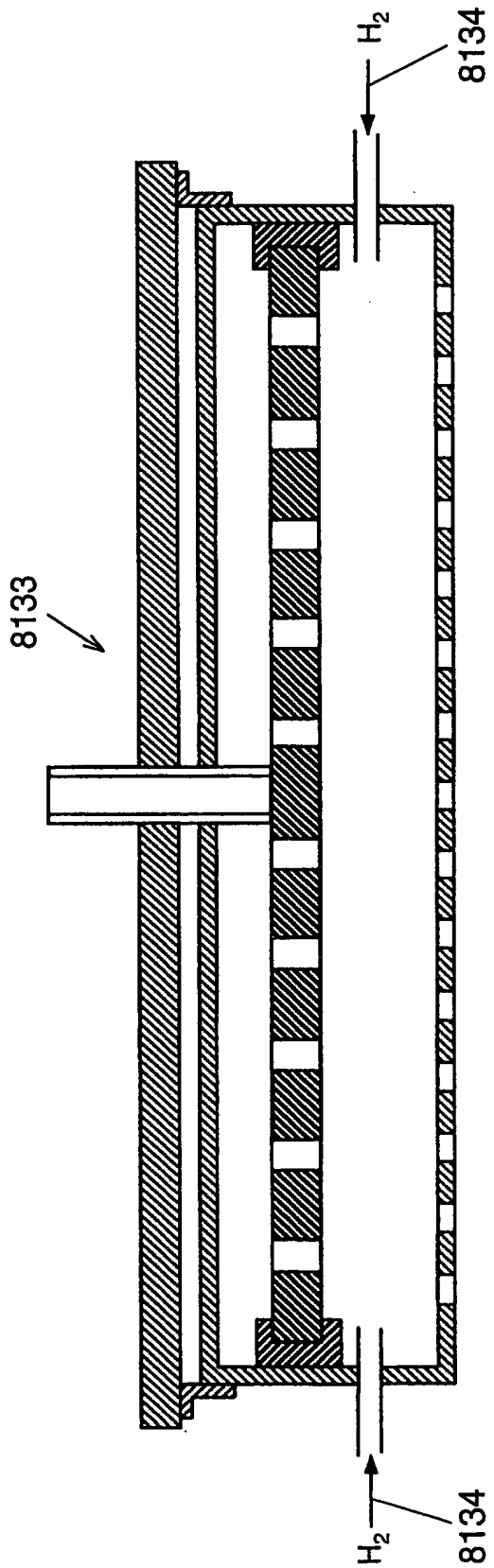


FIG.44

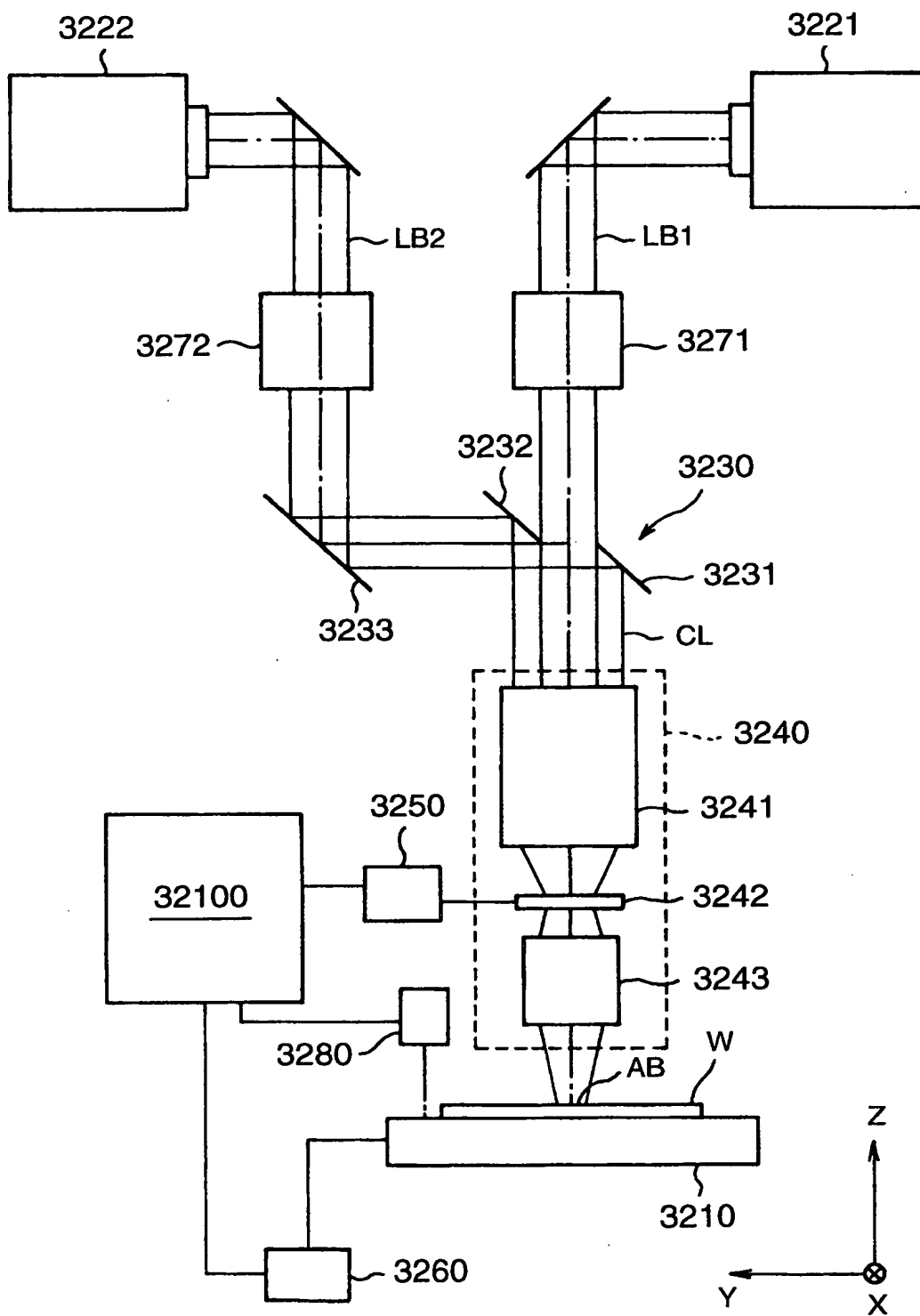


FIG.45

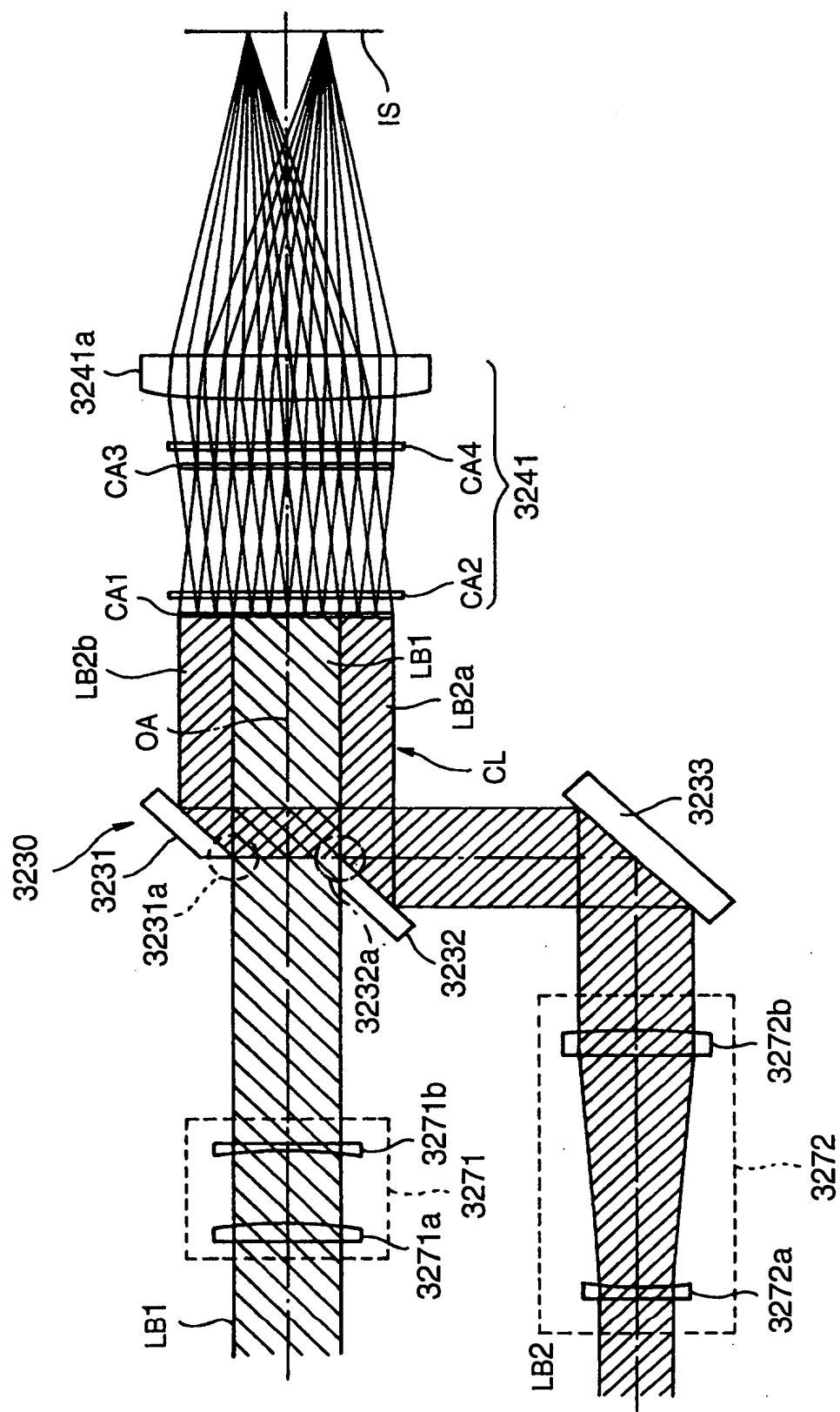


FIG.46

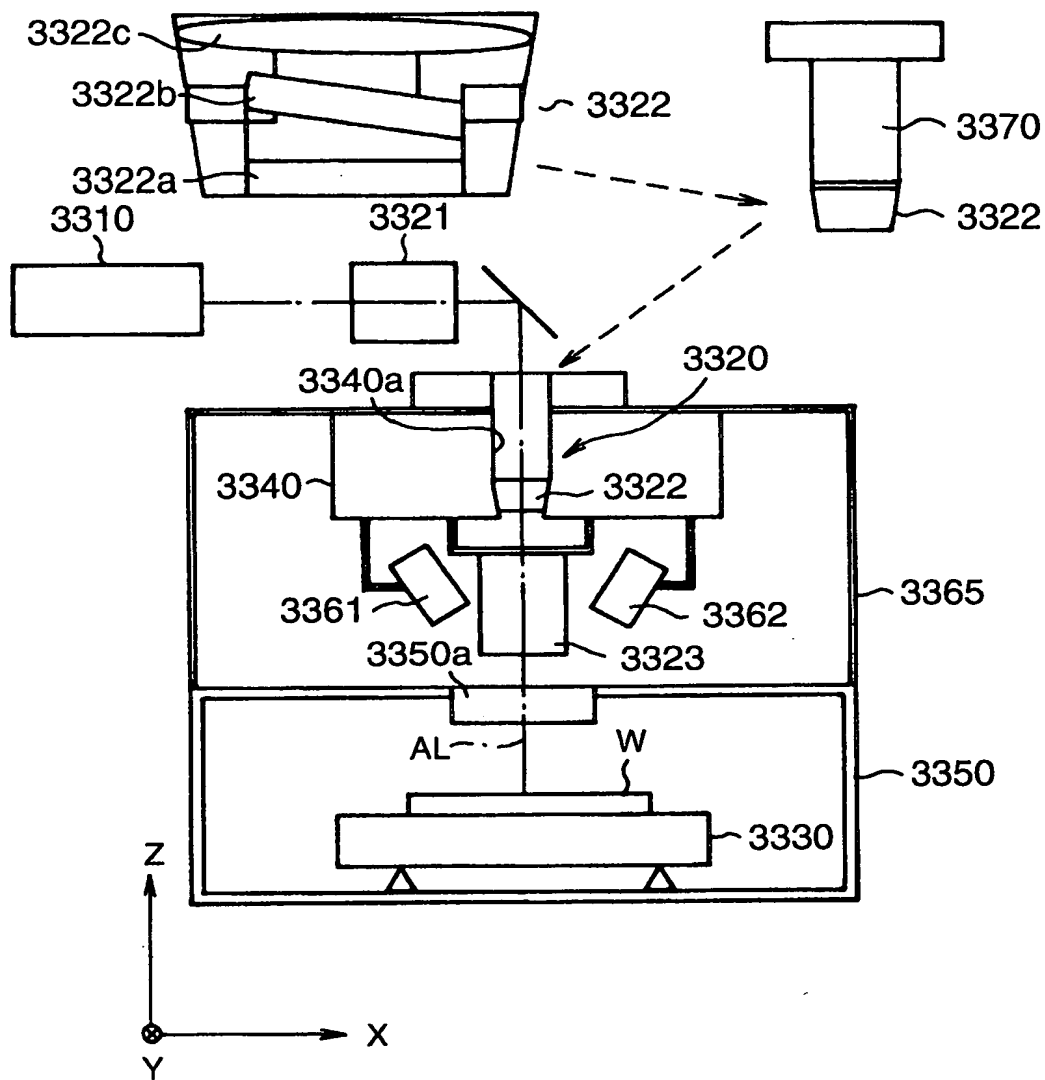


FIG.47

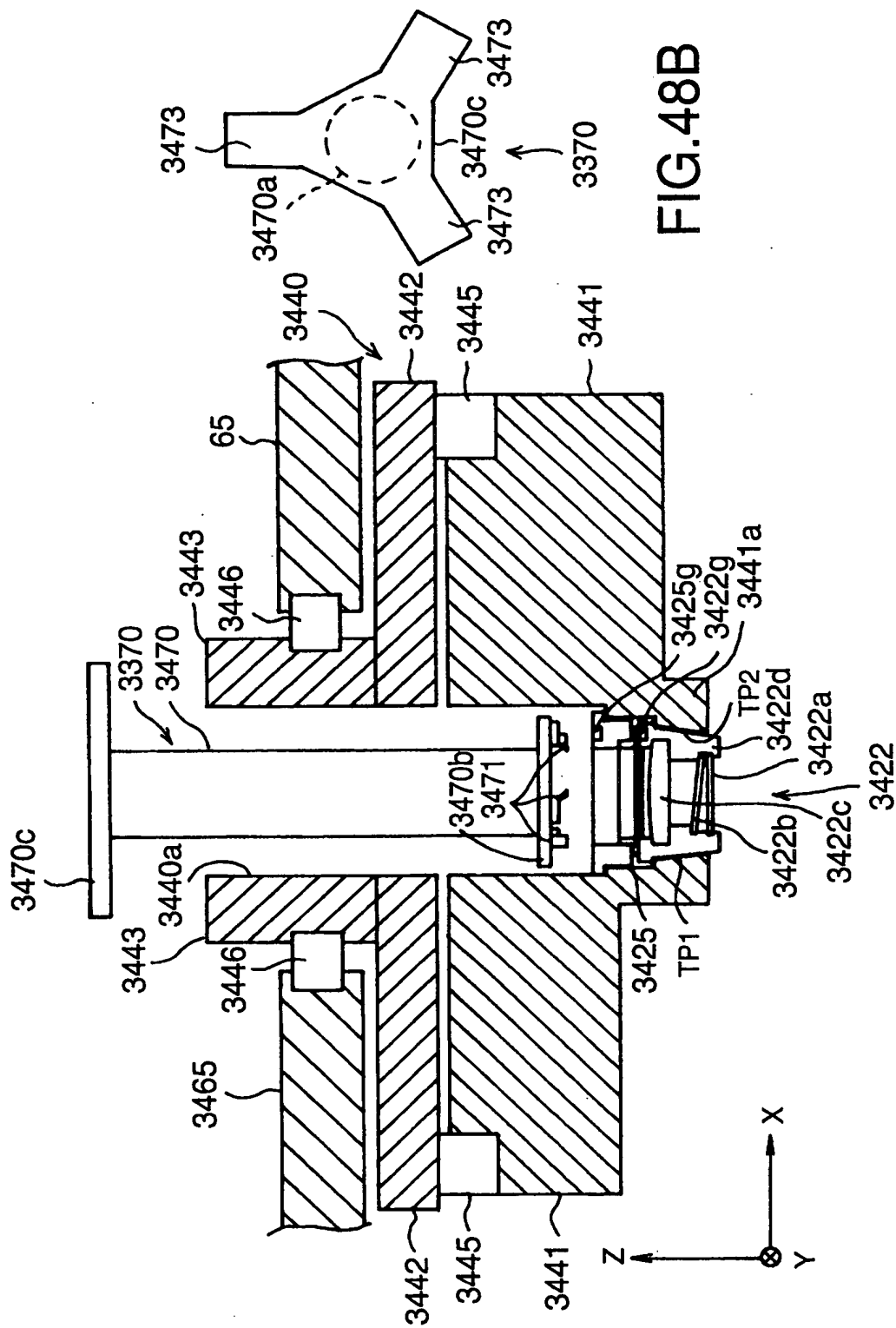


FIG. 48A

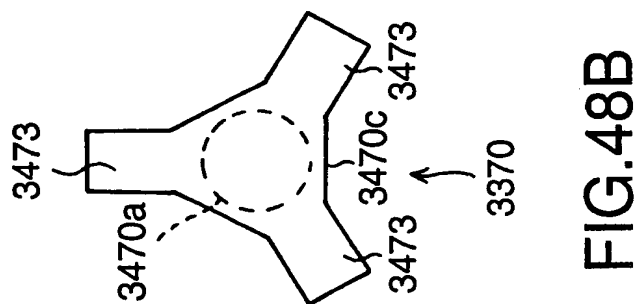


FIG. 48B



FIG.49

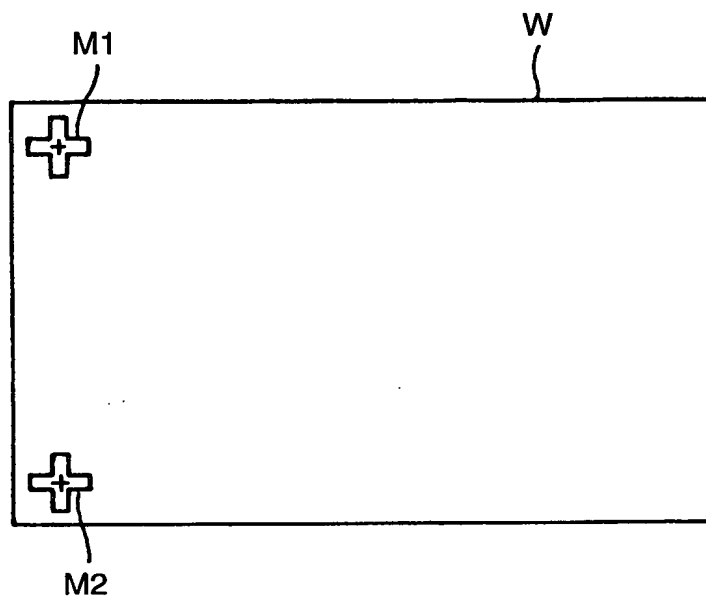


FIG.50

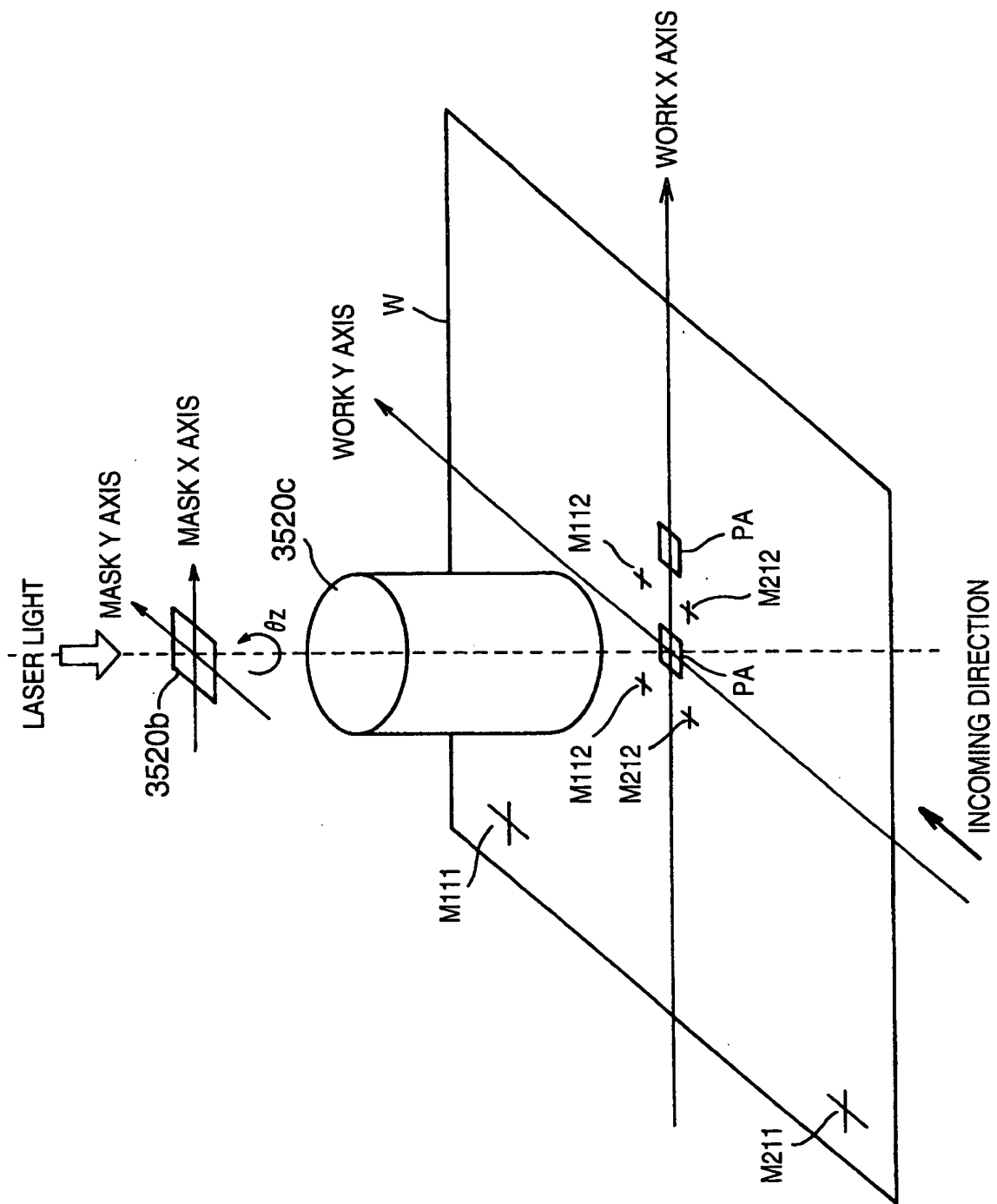


FIG. 51

